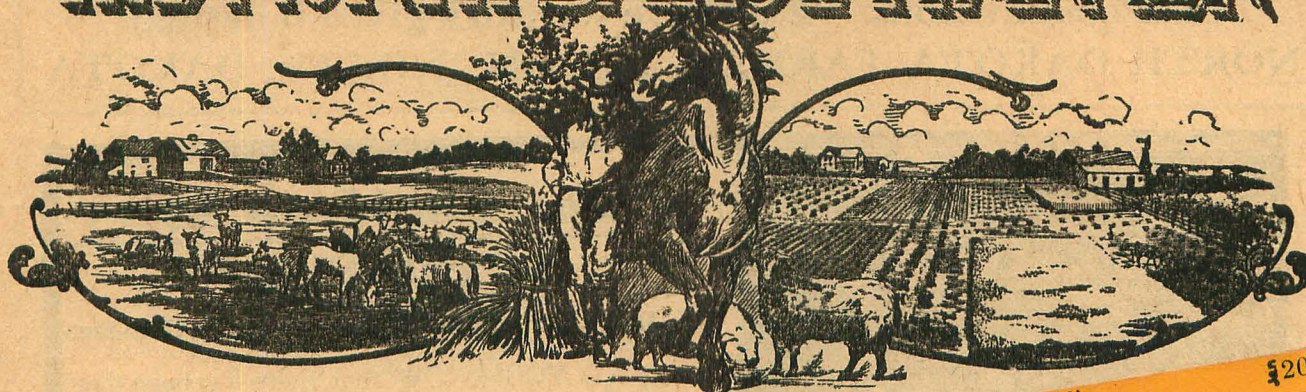


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THE NORTH DAKOTA FARMER



75 Cents A Year

Alex Alin

\$20

Lisbon, N. D.

January 15, 1917

Vol. 18, No. 7



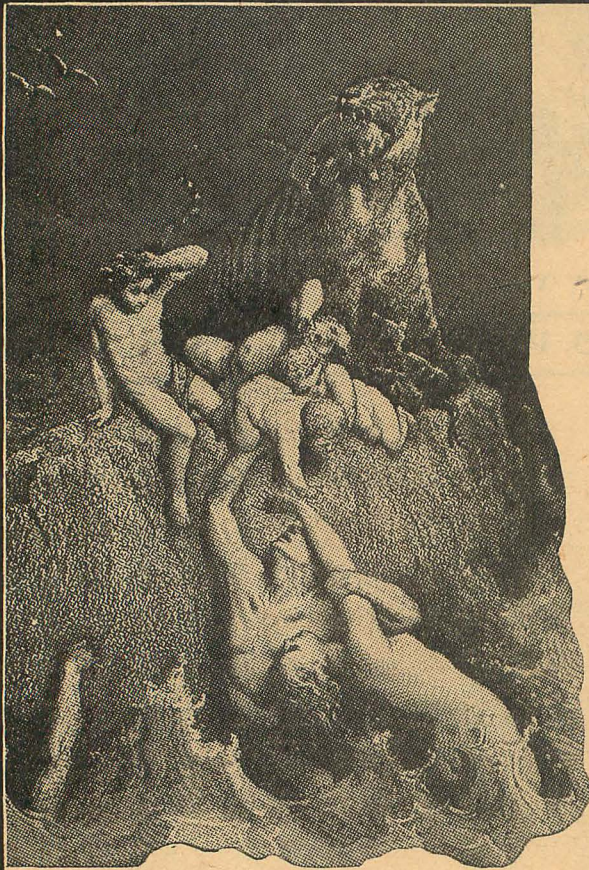
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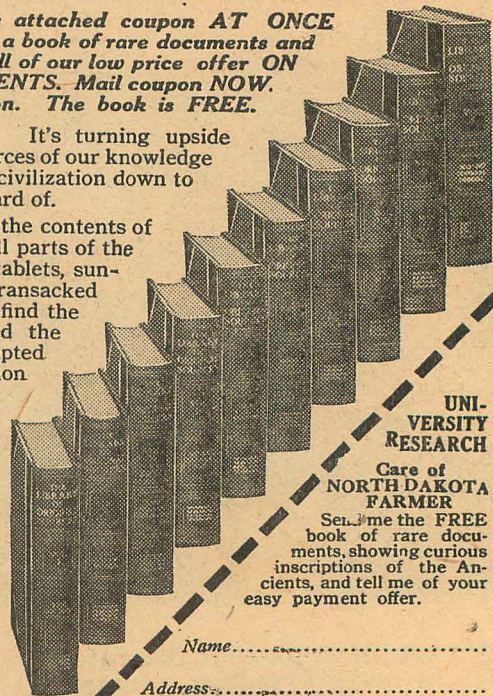
DO YOU KNOW that there has been dug up from the ruins of old Chaldea a complete story of the Flood—the same in every detail as Moses' account in Genesis—and that it was written thousands of years before his version appeared? Hardly one in a million has ever had an opportunity of seeing this startling story—**HAVE YOU?** But it is one of the many thousand curiously interesting accounts in

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THE NORTH DAKOTA FARMER

Vol. 18, No. 7

LISBON, N. D., JANUARY 15, 1917

75 Cents a Year

Let Us Reason Together

NEW ZEALAND FLAX FIBER THE FUTURE SOURCE OF TWINE

OF VITAL INTEREST TO GRAIN GROWERS

Charles Cristadoro, Pt. Loma, Cal.

I Sit in a wheel chair and look around and across the chaparral and out to sea upon the Southern California sun-glinted and cloud-shadowed ever-changing land- and seascape.

I have done this for ten years and will so continue to the end. I live by day in a lath-house so arranged as to keep out too much Southern California sunshine and ocean breeze. I am embowered within and without the house in blooming growths and am droned to by bees and hummingbirds feeding within the blooms.

Visitors come, old friends and new friends from all points of the compass, all prepared to commiserate and sympathize but going away in cheerful laughter and with promises to come again soon. I am resigned and contented with a lot that cannot be changed; and life yet has its charms because daily active occupation means almost complete extrospection; and that is beyond compare in the case of a shut-in, contentment making the daily cycle ring true.

Romance Visits Shut-in

But to my romance. It so happened that an inventor called upon me one day. He said he wanted my advice, my help. He really wanted me to become his business "promoter."

A wheel-chair occupant is not generally associated with the idea of an ordinary promoter, for the very nature of a promoter's work is to look up moneyed men, get them interested, run after them, or, like J. P. Morgan I., Emperor of Promoters, to have a waiting list of investors.

blue-flame stove, heated them red-hot and then threw them into cold water. No blistering occurred. The copper plating held firmly and the paint and iron as one body, galvanized iron in effect.

Inventor Was Versatile

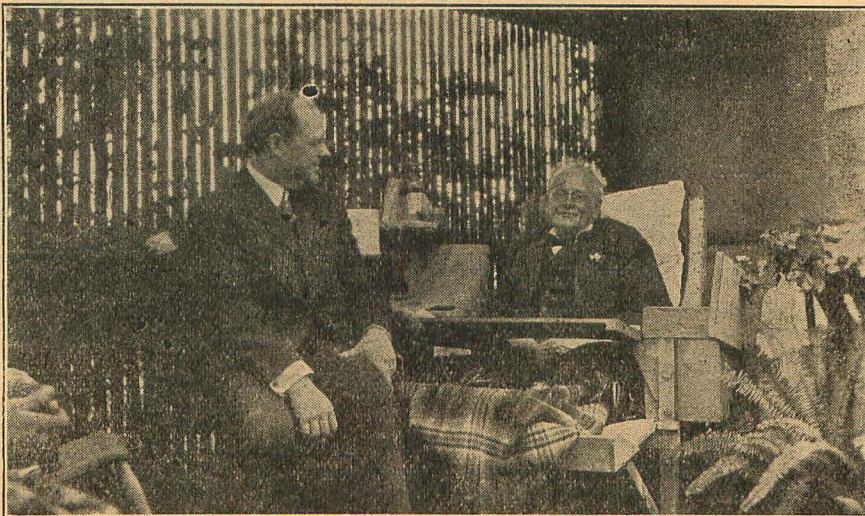
There were other processes of more or less interest. He had a list of ninety-two and many presumably of great value. Then he drew forth a bunch of bean straw, fiberized, and snow white, and as tough as flax. Bean straw shredded as strong and tough and white as linen rag stock.

We burn up 75,000 tons of bean straw in California annually and four or five times as much in the East. Seemingly it is of no account, there is no use made of it, it should all go

back into the soil. In the light of the paper-pulp famine in the East, all over in fact, this interested me above all his other samples. Paper surely is a live problem, and growing more live every day, especially linen rag paper.

Now came a sample of vegetable silk made from the raffia, fiber of the talipot or Buri palm. This fiber was open to uses innumerable.

I was interested in this process at once but the millions of fiber-bearing palm trees off in Ceylon and elsewhere grew "too far from the Bowery" to suit me. If he could, wizard-like, produce vegetable silk threads, why could he not



Charles Cristadoro in his Cozy Lath Hause

Our inventor had run foul of promoters, the 99 44-100 per cent for themselves kind, and they had left deep scars on his psychic anatomy. It looked as if he was selecting me because if I landed any deal I could not get safely far away with the proceeds before he caught up with me.

"Show me what you have," said I.

"Copper and nickle-plated aluminum and aluminum solder, and here is a rust and damp-proof paint."

He put the samples of copper-plated aluminum and the rust proof painted sheet iron upon a nearby

do that with other fibrous growths? A leading question. He surely was a pulp and fiber "wizard."

And I began to test him out. I sent him leaves of the Spanish bayonet to be fiberized; the yucca that grows wild, millions of tons of it, upon the desert, and back the leaves came, a mass of fiber. Samples of Kentucky hemp stalks were sent him. He freed the bark from the stalk in fifteen minutes, just shook it loose from the stalk, and then processed the hemp into such a soft, delicate fiber as to make it worth \$400 to \$600 per ton and fit for spinning and weaving into the finest fabrics.

But Kentucky hemp will yield, according to the government, but 750 or 850 pounds of tow-free fiber per acre; 1000 pounds under the best possible conditions. Too small a yield. No better than sisal from henequin. The ramie stalk met with the same success at his hands. No trouble whatever to quickly debark and degum the fiber. The fiber-freed stalks of hemp and ramie he transformed into paper pulp.

Binder Twine Needed

I still kept on hunting. Incidentally, the cotton stalks, the cereal straws, wheat, oats, barley and rice he made into paper pulp. He found no difficulty in bleaching the cotton stalk fiber and removing the color. The Dakota flax straw, grown for seed, he defiberized, freeing the fiber from the stalk. We burn up 6,000,000,000 pounds of this paper-making linen-rag straw annually. But a great howl was going up all thru the Northwestern wheat states and I wanted a binder twine fiber. The sisal trust was grinding the face of the wheat farmer and at this time, strange to say, down from the University of California came a leaf of New Zealand flax 8 feet or more in length. I examined it carefully. It seemed to be almost pure fiber, so far as my eye could judge. The wizard (my neighbor, the Hon. Lyman J. Gage, refers to this inventor as a composite of a modified Edison-Burbank), sent this leaf back to me a mass of the strongest, most lustrous and silk-iest fiber I had ever seen. Apparently, here was a fiber find, a fiber bonanza, so to speak. Later a leaf was sent down to me, followed by great bundles from our Exposition grounds from a plant two years old, leaves eight and one-half feet long and weighing half a pound each. A hundred pounds of these leaves, more or less, to a mature plant!

Scientist Begins Study

At once, I began to read up on New Zealand flax (Phormium Te-

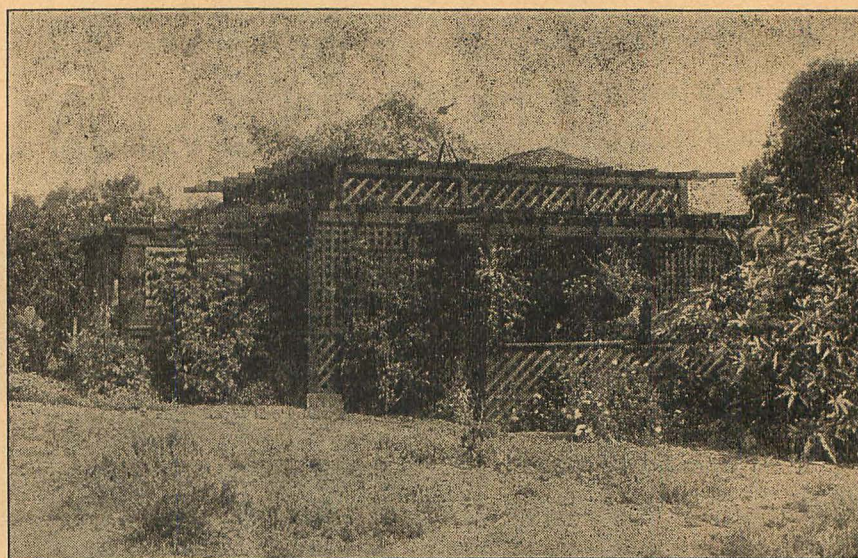
nax). It is a perennial growth, everlasting so far as I can learn, once it takes hold, and indigenous to New Zealand, but eminently adapted to a California environment, growing here more quickly than in New Zealand, plants grown from roots maturing and yielding in our Fair Grounds in two years. In New Zealand, it grows in swampy lands without care or cultivation, yielding easily 10 to 15, sometimes 25 tons of leaves per acre! Much of our swamp land areas could be reclaimed by this plant, most profitably, and yet with an "equal-to-lemon" orchard irrigation, it will grow on all but worthless soil, and may turn our mesas into dividend-paying lands that no orange or lemon orchard or alfalfa field can equal. Irrigation, seemingly, more than soil is needed.

This New Zealand flax is rated as to tensile strength at 100, whilst hemp is rated at but 70 (presumably the manila or sisal fiber), and flax (presumably the European flax) at but 50. That is where the Tenax comes in—tough; 100 per cent stronger than flax when woven into cloth.

The wonderful India paper that for strength is the marvel of the paper world is made from European flax, and that accounts for its unapproachable strength. And here is Phromium Tenax double the strength.

Flax to Supplant Sisal

So this was not only to prove a most suitable fiber for binder twine, supplanting sisal from Yucatan, but a field of unlimited uses is to be opened up to it. Sisal is the ordinary raw material from which most of the binder twine is made, but at



Exterior of the Lath House--whose latchstring is always out to the man who is in earnest

Under cultivation and irrigation, leaves might grow to a length of 12 to 14 feet. It grows from seed and from roots, presumably better from the latter. It resists everything, even a moderate 26 degrees Fahrenheit frost. (Note, from New Zealand Agricultural Reports: One of the easiest plants to grow. Is not in any way affected by frost, nor the most severe winds.)

Once planted, the growth is permanent. A single plant under proper cultivation is said to yield 50 to 100 pounds of green leaves at a single cutting and a yield of 50 tons per acre is reasonably to be expected. Grown in our Imperial Valley and Southern California generally, it no doubt would do far better than the above. It is said if properly irrigated it will grow on the poorest of soil.

present there is an air-tight trust on sisal in Yucatan from which the International Harvester Company suffers like all the rest. It is not in the sisal trust.

Rope, cordage of all kinds, thread, nets and fishing lines, linen, paper and many other manufactured products await an abundant and cheap supply of this fibre. Automobile tires are to be made of this fabric because of its toughness. Even cotton, long staple, appears rotten alongside this tensile giant. All of these are of great importance when one can take the leaves green or dry as leather from this plant and machine them into a mass of lustrous fiber and the yield is 50 tons of leaves 8 to 12 feet long to the acre—longer, perhaps. A yield of fiber of 12 to 14 per cent from the green leaf.

It stools out in a number of

crowns from the ground, increasing the size of the plant very rapidly. These can be split off from the plant and reset. A crop of fifty tons of leaves per acre is a very conservative estimate. I know of very few plants which would respond more quickly to generous treatment and repay the grower better. It will thrive in almost any soil and grow in swamps where the water is not stagnant. It needs little attention, stands both cold and heat, and will give the grower far better returns than can be had from any plant or tree grown in Southern California.

The uses of the fiber are almost beyond estimation, being the strongest of any fiber known, and opens a wide field for a score of manufacturing industries.

(Continued in February Issue.)

Plan the Rotation

To assist those who would rotate their crops the following diagrams are submitted. They are the work of Miss Cora M. Kabrud, of Ellendale.

Figure 1.

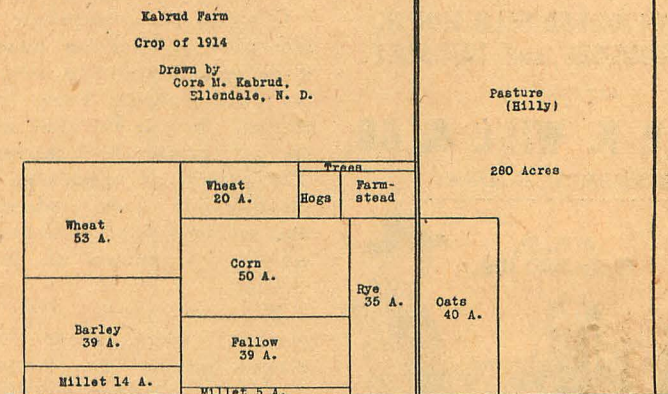


Figure 2.

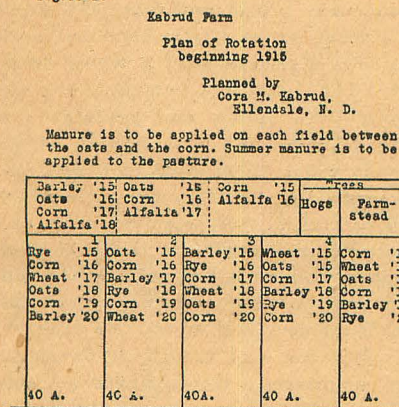
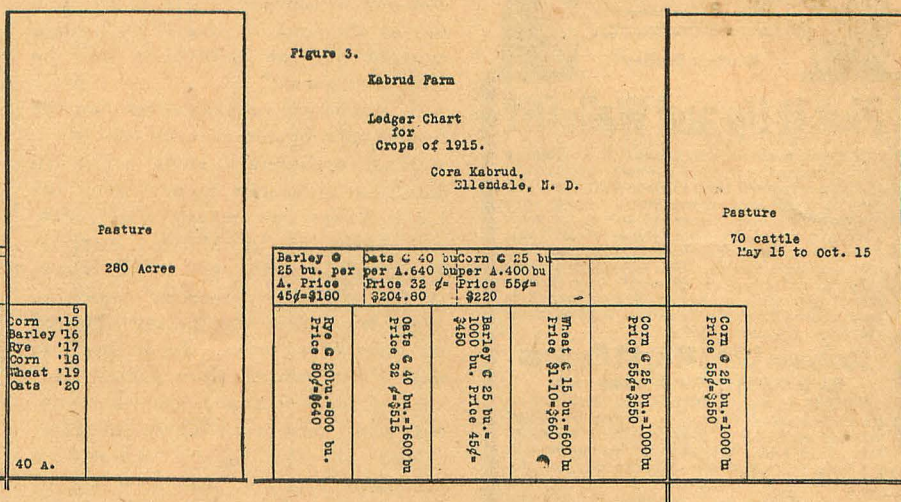


Figure 3.



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THE FEDERAL FARM LOAN ACT

James E. Boyle, N. D. Exp. Sta.

Land Titles and the North Dakota Law

The Farm Loan Act may force changes in some of our state laws. It is the duty of the Farm Loan Commissioner to make examination of the laws of every state in the union, and to inform the Federal Farm Loan Board whether, in his judgment, the laws of each state relating to the conveying and recording of land titles, the foreclosure of mortgages, the exemption of homesteads, etc., are such as to give adequate security and protection to the holder of first mortgages. The Commissioner may declare any state law inadequate, pending the making of an examination by him. If the examination, when made, shall show that the laws of any state afford insufficient protection to the holder of the first mortgages, of the kinds provided in this Act, the Federal Farm Loan Board may declare that these mortgages on land situated in

such state are ineligible as long as these laws continue on the statute books.

The Governor of the state has the right, under the Act, to call for a statement from the Federal Farm Loan Board, setting forth in what particulars the laws of the state fall short of meeting the requirements of the Board.

No announcement has yet been made concerning the North Dakota laws, but there is at least a probability that a system of registration of

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Dept. F. - Tacoma, Wash.

SEEDS, TREES, Plants and Flowers

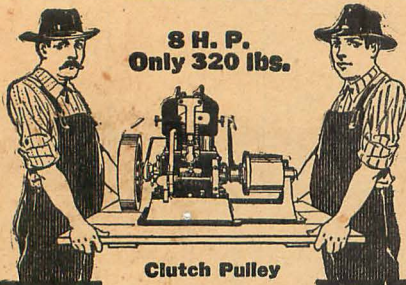
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Cushman Light Weight Engines 40 to 60 lbs. Per Horsepower

The 4 H. P. weighs only 190 lbs. Mounted on iron truck, as shown below, it may be pulled around anywhere. Besides doing all other work, it may be attached to moving machines in the field, such as grain and corn binders, potato diggers, etc., driving the operating part and leaving the horses nothing to do but pull the machine out of gear. 8 H. P. 2-cyl. weighs only 320 pounds.



Engine Weighs Only 190 lbs.

CUSHMAN MOTOR WORKS
881 North 21st Street Lincoln, Nebraska

land titles may be required similar to the Torrens System. Members of the 1917 Legislature may well give this matter early and careful consideration.

How to Organize National Farm Loan Associations

One fact for a borrowing farmer to remember is that no loans can be made to a person who is not a member of a National Farm Loan Association. Now is the time for borrowers to organize the local associations. The process of organizing the local, incorporating under federal charter, and getting started in business is very simple and requires no fee for the charter.

Who can borrow? Only "Natural persons," which means corporations cannot borrow. The borrower must also be a landowner, or "about to become a landowner". He must also be "at the time, or shortly to become engaged in the cultivation of the farm mortgaged."

A temporary organization can be formed now by ten or more borrowers, and all preliminary steps taken, in readiness to borrow money when the Land Banks are ready, which date will likely be in March, 1917. A Board of Directors are to be chosen at the preliminary meeting consisting of no fewer than five persons, elected for one year terms. It is best to elect six directors, since a two-thirds vote of the directors is needed to admit new members. These directors choose all the officers, namely a Secretary-Treasurer, who need not be a member, and from the membership a President, a Vice President, and a loan committee of three members. The County Agents will aid in organizing locals. Information can also be secured from the Extension Department of the Agricultural College.

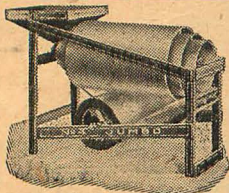
The Secretary-Treasurer is a salaried, bonded official. All the other officers are to serve without pay, un-

less pay is approved by the Federal Farm Loan Board. They are to be resident of the local territory. The pay of the Secretary-Treasurer is fixed by the Board of Directors, and comes out of the funds of the local association. Since the share capital of the local association is all invested in shares of the Land Bank, its current funds must come from other sources. These current funds are derived from four possible sources, as follows: (1) commission of one-fourth of one per cent a year on the principal of its unpaid loans. This commission is believed to be adequate to meet all expenses of the local. (2) Dividends on the shares of stock in the Land Bank, if any are earned in excess of the commission above named. (3) Assessment, if necessary, of the members of the local. (4) Loans from the Land Bank, to a limited amount, at six per cent interest.

The Secretary-Treasurer is the most important official and especially so, if the local covers a large territory, such as several townships or a whole county. His duties are numerous and require both ability and honesty to a high degree. He is custodian of all funds which he deposits in some bank selected by the Directors. He keeps all securities, records, papers, and documents belonging to the local association and must have a safe or vault for this purpose. He pays over the loans to the borrowers. He collects, receipts for, and remits all payments on mortgages. He is under suitable bond. He makes report to the Federal Farm Loan Board and carries out the orders in the application. He must report delinquent taxes to the Land Bank.

The Articles of Association, adopted at the preliminary meeting must be acknowledged by a notary public or a justice of peace.

Each borrower files with the Secretary-Treasurer his application for a loan. These applications can be made temporarily on blank forms showing: (1) signature of applicant, (2) post office address, (3) amount of loan desired, (4) purpose of loan, (5) estimated value of land offered as security. After the local gets its charter from Washington, blank applica-



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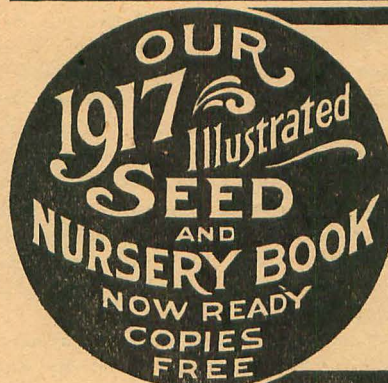
203-5th St. N. : : FARGO, NORTH DAKOTA : : Telephone 926

tion forms will be provided by the Land Bank.

Borrowers subscribe for stock in the local when they apply for a loan, five dollars in stock for every hundred dollars of loan. The stock is not paid for till the loan is received. Or the borrowers may have the land bank reduce the price of the stock from the amount of the loan. In this case, the farmer borrowing one hundred dollars will get ninety-five dollars, but this mortgage will read one hundred dollars. The borrower's stock in the local is deposited with the local as collateral security. It is expected to pay small dividends, and when the loan is paid off, the borrower's stock

is paid for at par and retired. Each borrower has one vote in the local for each share of stock held, up to twenty

shares. No borrower can hold more than one hundred shares of stock in the local association.



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Don't Let Disease Get YOUR Live Stock

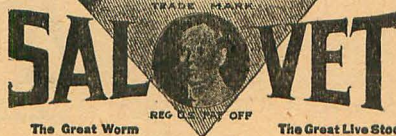


At this season, your feed lot is the breeding place for disease. Here many GERMS and the larvæ of WORMS are taken into your animals' stomachs, where they thrive and multiply rapidly. You can't tell when disease is going to "clean you out" entirely.

WORMS cause more diseases and ACTUAL LOSS among live stock than any other single thing. It is but a short step from worms to indigestion, scours, disease and death. It is far better to be safe than sorry—also cheaper. Keep your

animals free from these blood-sucking, disease-breeding, feed-consuming pests and you can practically laugh at stock ailments. Thousands do it—so can you with

The Great Worm Destroyer



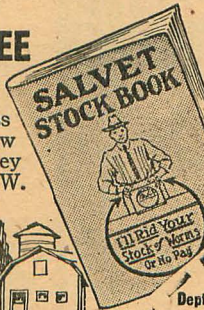
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GRAINS FOR THE MONTANA DRY LANDS

During the past ten years there has been an enormous influx of settlers into the vacant lands in Montana. These homesteaders have for the most part come from other states and are unfamiliar with the general farming conditions in Montana. They are thus confronted by a multitude of problems. A majority of them have little capital, the distance to market is great in many cases, and the lack of knowledge of the best crops to grow on dry farms is a serious handicap.



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OUR COMPANY IS THE OLDEST AND LARGEST, with LARGER CAPITAL than any other House. Where ordinary Hides and Hides every day, selling to American and Canadian Manufacturers, and exporting to all Countries; just sent a \$30,000 shipment to Sweden. Little dealers cannot compete. We've no Traveling Agents. We want BEEF HIDES, too, paying 20 cents for GREEN HIDES, 30 cents for GREEN CALF SKINS, and HORSE HIDES up to \$3.00 each. We want your GINSENG and GOLDEN SEAL. Send for ILLUSTRATED TRAPPERS GUIDE. It is Free. WE TAN all kinds of Hides, making garments for our Customers, from their hides. SHIP US YOUR FURS AND HIDES, TODAY. Ask your Banker about us. The OLD SQUARE DEAL HOUSE, established 60 years. WIL BROS. & CO., Box F-55 FORT WAYNE, INDIANA.



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In the selection of suitable crops the average settler has to be guided by the necessity for growing a crop for which there is a ready cash market. The grain crops fill the bill, especially wheat and flax, as their value is high in proportion to their bulk. As a rule the dry farmer has at first little live stock, but as the amount of stock increases the production of feeding crops, such as barley and oats, likewise increases. Thus no matter what system of farming is practiced, cereal crops will always be of importance on dry-land farms in Montana.

Of special interest, then, is Farmers' Bulletin 749 recently issued by the U. S. Department of Agriculture, containing information regarding grain crops for the Montana dry lands based in part upon experiments conducted for the past eight years at the Judith Basin Substation at Moccasin, Montana, in co-operation with the Montana Agricultural Experiment Station.

In general the dry-land farming sections of Montana lie in the eastern two-thirds of the state, the western portion being mountainous and unsuitable for such purposes. Moccasin is in about the geographical center of the state and the results obtained from experiments there are applicable to a large part of this region.

When to Break Sod

It has been found that the period April, May and June is the best time to break native sod, as the work can be done most easily then on account of the moist condition of the ground. After plowing three and one-half to seven inches deep, depending upon the nature of the sod, the land should be packed the same day with a roller or disk. If a spring crop is to be grown, sod land should be plowed early to allow early seeding. If winter wheat is to be grown, the plowing need not be so early.

Summer fallowing is not recommended as a general practice but may sometimes be advisable every third year when winter wheat is to be grown on a large acreage. It is an expensive practice, for the land is plowed and cultivated without any return that year. A cultivated crop, such as corn, may be used as a substitute for fallow, as grain seeded on disked corn ground yields nearly as well as grain on fallow.

Auctioneers

Make \$10 to \$50 per day. How would you like to be one of them! Next four weeks' term opens Jan. 1. Write for big free catalogue.

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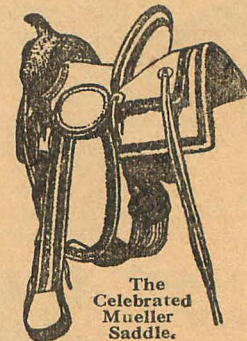
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Emphasis is laid upon the importance of using good, clean seed of the varieties adapted to the particular locality and conditions, and for this reason the farmer is advised to grow his own seed.

In harvesting, the use of combines (combined harvesters and thrashers) is not recommended for Montana. On large areas a header should be used, while on small farms a binder is considered best. The grain should be carefully stacked in both cases.

Winter Wheat

Winter wheat is the most important dry-land grain crop in Montana except in the eastern part of the state, where there is danger of winter killing. Its production in 1915, estimated at 18,225,000 bushels, exceeded that of spring wheat by about 2,500,000 bushels.

The best variety of winter wheat to grow in Montana is the Kharkof, the Department's specialists say. This belongs to what is known as the Crimean group of hard red winter wheats and closely resembles the Turkey wheat which is most commonly grown. It will stand more extreme heat and cold than the Turkey and is more drought resistant. Sowing may be done at any time between August 10 and September 10 at the rate of 3 pecks per acre.

Durum Wheat

It has been found that in the area where spring wheats are grown the durum is better than the spring common wheat. While durum wheat frequently brings a little less on the market than spring common wheat, the difference in price in the last few years has not been great, and the durum sometimes has been sold for more than common wheat. Even a lower market price, however, will be usually offset by the higher yield of the durum wheats, and they are recommended for the extreme eastern part of the state.

Of the durum wheats tested at Moccasin, the Pelissier variety has given highest average yield. Other better-known durum varieties that have yielded well are the Kubanka and Arnautka. The Marquis is a promising variety of the spring common wheats. This is a hybrid resembling the Fife wheats, which has been developed by the Canadian Department of Agriculture. It is adapted to the western

portion of the dry-land section.

Oats

Good yields of oats, which are at present grown not as a cash crop but for feeding, ordinarily can be obtained on the dry lands of Montana. The Sixty-Day, a variety maturing in about 100 days, is recommended as the best to grow. Its chief advantages are its earliness; its fine straw, which makes it more suitable for hay than later varieties with coarse straw; and its thin hull, which gives it a high feeding value. Since it is grown for feed rather than for market, the yellow color of the kernels is not objectionable.

Barley

Barley is not yet an important crop

on the dry lands in Montana, though the heavy yields obtained at Moccasin justify the belief that it should be more extensively grown. There are two main groups of barley, the hulled and the naked or hull-less, in both of which occur two-rowed and six-rowed and also bearded and beardless varieties. The hulled barleys are used for brewing and feeding purposes,

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Try a Central Missouri Farm. Two good lines of Railroad. Good schools; Railroad division; best of water. Write R. F. White, Elden, Mo.



Canada's Liberal Offer of Wheat Land to Settlers

is open to you—to every farmer or farmer's son who is anxious to establish for himself a happy home and prosperity. Canada's hearty invitation this year is more attractive than ever. Wheat is much higher but her fertile farm land just as cheap, and in the provinces of Manitoba, Saskatchewan and Alberta

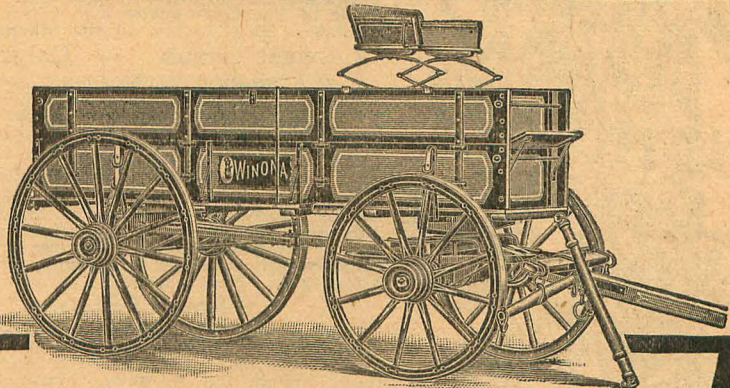
160 Acre Homesteads Are Actually Free to Settlers and Other Land Sold at from \$15 to \$20 Per Acre

The great demand for Canadian Wheat will keep up the price. Where a farmer can get near \$2 for wheat and raise 20 to 45 bushels to the acre he is bound to make money—that's what you can expect in Western Canada. Wonderful yields also of Oats, Barley and Flax. Mixed Farming in Western Canada is fully as profitable an industry as grain raising.

The excellent grasses, full of nutrition, are the only food required either for beef or dairy purposes. Good schools, churches, markets convenient, climate excellent. Military service is not compulsory in Canada but there is an unusual demand for farm labor to replace the many young men who have volunteered for the war. Write for literature and particulars as to reduced railway rates to Supt. of Immigration, Ottawa, Can., or to

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Grand Forks, N. D.
Canadian Gov't Agt.





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WINONA Wagons are built to make good in hard, steady road and field use. Extra strong where extra strength is needed. Made from "bone dry", time seasoned oak and hickory, ironed "for keeps."

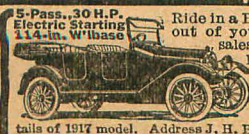
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OUTER bearing axles prevent breakdowns. Clipped gears, strongest wheels in the world. Bent, double-riveted Felloes. Strongest Skeins, Poles and Hounds. Substantial extra cleated Boxes. Durable painting.

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5-Pass., 30 H.P. Electric Starting. 134-in. Wheelbase. Ride in a Bush Car. Pay for it out of your commissions on sales. I am daily shipping cars to Bush Agents. 103 went out last April. Big profits for you. Write at once for my 48-page catalog giving full details of 1917 model. Address J. H. BUSH, Pres., Dept. 1206, BUSH MOTOR COMPANY, Bush Temple, Chicago, Ill.

Beautify The Home

Let us Co-operate with You

12 Hardy Perennial Flowering SHRUBS FREE!

By far the most magnificent collection ever offered. Providing a veritable sea of ever-changing, fragrant bloom from the earliest spring, through the summer, fall, and to the very edge of winter. With ordinary care, they will bloom the same year planted.

2 Golden Bell — Forsythia

These splendid old shrubs, growing 8 to 10 feet tall, light up the garden with glinting masses of yellow, very early in the Spring before the leaves appear. Their bright golden flowers, often appearing before the snow has gone, vie with the Crocus as harbingers of Spring.

2 Thunberg's Barberry

Inimitable neat, dense and very graceful. Spherical in shape. Its brilliant yellow flowers, which appear early in the spring, are followed by vivid scarlet berries which remain throughout the winter. Its deep green foliage changes in the fall to scarlet and gold. Grows 3 to 4 feet high.

2 Deutzias One Pride of Rochester One Crenata

These valuable shrubs come from Japan. Very hardy, with luxuriant foliage, and a profusion of massive white flowers 4-6 inches long. The Crenata is double white, tinged with rose. The Pride of Rochester grows 6 to 8 feet high, and blooms in May, before all the others.

2 Sweet Shrub — Calycanthus

A very beautiful shrub of quick growth. The wood is fragrant, the foliage rich, and the flowers, deep chocolate red, have a peculiar spicy fragrance. Grows 4 to 5 feet high. Blooms in June, and at intervals until frost.

2 Snowball Hydrangeas

A grand addition to the summer flowering shrubs; dwarfing the show of other sorts in July and August by the magnitude and profusion of its flower heads. The "snowballs" are conspicuously white and imposing. Grows about 6 feet high. Very hardy.

2 Rose of Sharon

Blooms from late August until winter with a profusion of large, brightly colored flowers. Makes the most gorgeous show of color to be found among the deciduous shrubs, at a time when few flowers are in bloom. Attains a height of 10 to 12 feet.

These twelve shrubs, full one-year size, will be sent to you at once, with full instructions for storing until planting time, and for planting. If you prefer, we will instruct the nursery to store the shrubs, and send them to you at the right time to plant. All charges are prepaid. They are delivered FREE to your mail box.

Send only 75 cents in money order, check or stamps to the North Dakota Farmer, Lisbon, N. Dak., and you will receive this collection, post paid and the North Dakota Farmer, one year. Address,
NORTH DAKOTA FARMER, - - LISBON, N. D.

while the hull-less varieties are suitable for feeding only.

White Smyrna is considered to be the best barley to grow on the dry lands. This is an early variety of the hulled barley, maturing in about the same length of time as the Sixty-Day oats, and seems especially adapted to regions where severe droughts are likely to occur. If barley is desired for hay or hogging off, the Nepal (White Hull-less) is recommended.

Flax

Flax has been grown in Montana chiefly as a sod crop. Because of its high bushel value it is an important crop for the new settler who is a long distance from the railroad. Flax diseases increase in the soil when this crop is grown for several years on the same land, and it should therefore be grown in rotation with other crops. The variety known as Russian (North Dakota No. 155), which belongs to the seed flax group, is recommended for the western portion of the dry-land sections. Flax requires a firm, even seed bed, and should not be sown deeper than one to one and one-half inches, as the seeds are small and the young plant has difficulty in reaching the surface.

Early Seeding for Spring Grains

Early seeding is desirable for all spring grain crops. Wheat, oats, and barley should be sown as early as the land can be prepared. The best date for sowing flax is between April 15 and May 1.

The best rates of seeding for the spring grain crops are as follows: Wheat, 4 pecks to the acre; oats, 4 to 5 pecks; hulled barley, 5 pecks; naked (hull-less) barley, 4 pecks; and flax, 15 to 20 pounds.

POTATO DEPARTMENT

H. O. Werner, Secy. N. D. Potato Assn.

SPUDS

W. E. Vaplon, Fort Collins, Col.

"Spuds is the crop," said Farmer Jones, "the crop that brings the silver bones—the kale for which the farmer hones." "No sir," said Sweet, "give me the beet. It pays for all the things we eat, for shoes to fit the children's feet; the beet pays for the light and heat and puts us all on easy street. "You're both mistook," said neighbor Lee, "for if you'd look you'd surely see there's gold in wheat; Wheat's what made me. Whatever anyone can see in any other crop, beats me; give me the wheat," said neighbor Lee. "Sure wheat's all right, said old man Wood. "No use to fight cause spuds are good and beets ain't

bad, they bring the mon and digging them is sure some fun; the beet man's work is never done. But as for me," said old man Wood, "alfalfa blossoms sure smell good. Alfalfa's king of all the crops, it beats the spud and wheat and hops." "I see you're just a little off, all money mad," said Deacon Goff. "At spuds and beets I can but scoff and ask you, gentlemen, to doff your beavers to the crop that's worth more than all other crops on earth. I'm speaking, men, of girls and boys, that bring the farmer sweeter joys than Henry Ford with his tin toys. Give me the kids and take your wheat and hay and spuds and sugar beet!"

DISEASE INSIDE OF POTATO

In a recent discussion of potato diseases, only that side was dealt with which has to do with the characteristics of diseases as they appear on the outer surface of the tuber in the bin.

Let us visit the bin for a second time and suppose that we have removed all potatoes that have shown any signs of mould growth or rot on the outer surface. What then is left in the bin, is a lot of potatoes sound and healthy as far as all external appearances are concerned. The skin is unbroken and unblemished.

The question arises as to whether we always have a disease free lot of seed potatoes under those conditions. This question can be answered by an examination of the interior of the potatoes.

On cutting a thin slice off the stem end of a potato, say for instance a slice one-sixteenth of an inch thick and directly across the end, one will find one of two possible conditions. If the potato is disease free, the flesh will be white thruout. If the potato is internally diseased, then the flesh will have parts colored brown. These brown colored parts will have the shape of a star in the center of the whitish flesh. On cutting off another slice of one-eighth inch thickness the brown star will be found to have spread out into a very wavy circle. Sometimes on cutting off still another slice the brown will have been cut away entirely. Often one can continue cutting off slices and the brown will be found in the form of a circle one-fourth of an inch from the surface, and here and there the line of the circle will be broken wherever it makes connections with any eye of the potato.

This brown color constitutes what is known as one of the most harmful diseases of the potato and is prevalent in the state of North Dakota. It is

produced by one or two moulds in the interior of the potato. These moulds are the germs that cause wilt and weak plants in the field. They are carried over in the soil and in the seed potato.



Improved Erie Cleaner and Grader. In our Erie you will find a new fanning mill to separate Oats from Wheat and Barley and grades it better than any mill made. This we do on our new roll system in place of a flat screen as all others have. This also takes cockle out, that others cannot do. This is the only way to grade by rolls; cleans all grain perfectly, also Grass Seed and Flax. We guarantee a perfect grader in our ERIE mill. Wild Oats separator every Farmer needs, to get clean Seed Oats. We have also a perfect Smut machine. Every machine guaranteed. Buy no other until you have written us for full particulars. Write at once for Catalog "B".

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DURUM WHEAT also MILLET SEED

in either car lots or small shipments. Mail samples for our bid.

FARGO SEED HOUSE

Fargo,

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Reboring and Grinding of Cylinders

This is the time to fit up your steam engines and gas tractors for the coming season

We can rebores and grind your cylinders, fit new oversize pistons and rings, make and fit new crank pins, straighten shafts, bore and bush gears and clutches or do any kind of machine work. Refue boilers and replace stay bolts. We carry in stock all sizes of stay bolts, patch bolts, bracket bolts, rivets, boiler flues, stay-bolt taps and boiler taps, shafting, shaft hangers, cast iron pulleys, woodsplit pulleys. Write and let us quote prices on any work you have.

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P. O. Box 295. - - - Telephone 554 W.

NORTH DAKOTA SCHOOL LAW

For the first time since 1911 has the State published a volume of the School Laws, and not until 1919 will another edition be printed by the State.

WOULD YOU KNOW

For what reasons a pupil may be suspended or expelled?
Whether one is allowed to read the Bible in school?
What branches must be taught every day?
For what purposes the school house may be used?
Who may vote on school matters and what are the voters' qualifications?
How schools may be consolidated?
What recourse one has if he is not satisfied with the ratings of the examining board?
Whether free text-books may be adopted without a vote?
What to do when a pupil or parent disturbs the school?
What provision is now made for transportation of pupils?
How pupils may be compelled to attend school?
Whether children may be employed in stores and factories?
How a certificate may be revoked?
What the law is regarding drinking cups, fire escapes, hitching posts, school libraries, pension fund, accredited diplomas, etc.

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Price, post paid, 30 cents.

W. G. Crocker,

Lisbon, North Dakota

North Dakota Farmer

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Lisbon, North Dakota

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Remittance may be made by draft, check, money
order, or stamps if it will accommodate.

Vol. 18 JANUARY, 1917, No. 7

Co-operation, conservation, cattle,
cash.

Prof. H. L. Bolley stands ready to
test your seeds, if you are not in
position to do it yourself.

This week the Tri-State Grain
Growers' Convention is being held at
Fargo. Everything points to one of
the biggest and most enthusiastic
meetings ever held in the state.

It has been found that where alfalfa
and manure have preceded the corn
there has been an average increase in
two years of nearly 20 bushels per
acre. This is another feather in the
many plumed cap of alfalfa.

At this writing it seems very
probable that the women of North
Dakota will be given a limited suf-
frage. The Senate has passed such a
bill and it is very probable that the
House will concur. Governor Frazier
is very friendly to the measure.

We are pleased this month to pub-
lish an article by one of the coming
generation of real farmers. We hope
that many young men thruout the
state will follow his example in di-
versification.

During the winter evenings why not
plan for a more beautiful and con-
venient farm home? Send in a postal
now to the North Dakota Experi-
ment Station asking for circular No.
10. It will be sent you promptly and
you will be very much interested in
the 50 illustrations if nothing more.

Too much care can not be taken
this spring in selecting the seed wheat.
Not only is a great deal of the grain
light and shrunken, but it also con-
tains many diseased kernels. While
these defective seeds may grow, they
certainly will lack vigor and will

spread the diseases to other plants.
To be sure, there has been a great
temptation to sell the very last kernel
of wheat in this time of high prices,
but in the end it will be a most un-
profitable sale. Plant plump, viable
seeds and avoid disaster. Test your
seed.

We quote from an editorial para-
graph of the North Dakota Farmer of
October, 1911: A closer cooperation
among the farmers would prove highly
beneficial to the business of farming
as well as to the farmers generally.

* * The old feeling of dis-
trust among farmers should be dis-
pelled—the sooner the better." Well,
cooperation has happened, tho it did
take five years of agitation and one
year of "eruption." It is hoped that
the "old feeling of distrust" has been
diminished at least.

After reading the account of the
Boys' and Girls' Institute, as written
by Miss Ethel McGuigan, of Chaffee,
you must admit that the winners at
the state industrial contests were
given a wonderful opportunity for
both study and recreation. We con-
gratulate the county commissioners,
commercial clubs and enterprising
business houses who made it possible
for these winners from the various
counties to attend. These 125 boys
are preaching diversification more
effectively than all the editorials of
the state combined.

We are publishing this month an
article by Charles Cristadoro. Every-
one should read this article, for it
treats of a very important matter,
the question of twine supply. It is
high time there was some means pro-
vided for utilizing the vast amount of
flax straw that is destroyed every
year. We have in this office samples
of several plants that have been
retted by the process mentioned by
Mr. Christadoro. The New Zealand
flax is, indeed, a wonderful fiber, and
we sincerely hope that the Govern-
ment will do for the growers of this
what it did for the farmers of the
Northwest in furnishing the seed of
Arnautka and Kubanka wheat.

It has been found impossible to car-
ry out the program of the Non-Par-
tisan League without a change in the
Constitution, and plans are on foot to
call a constitutional convention for
the purpose of so framing a new
constitution, that state-owned ele-
vators, mills and packing plants may
be established. On January 12 A. M.
Hagan, of Bottineau County, intro-
duced in the house the draft of a new
Constitution. Among the changes are

a provision for the state or counties
to engage in any occupation or busi-
ness; lengthening the term of repre-
sentatives to four years; making the
terms of state officers four years in-
stead of two; increasing salaries of
state officers; legislative sessions ev-
ery four years; terms of county offi-
cers to be four years; increasing the
public debt limit to \$500,000; that no
act adopted by the people of the state
shall be held unconstitutional; invest-
ment of the school fund in securities
within the state.

If it was contrary to the constitu-
tion for the state to build a terminal
elevator, were not some of those who
opposed that measure in the last
session of the legislature justified in
voting against it? If they were justi-
fied in so voting, should we not have
commended them for avoiding need-
less litigation and expense rather than
condemn them as traitors to the
farmers' cause? The farmer, as well
as the day laborer, has been imposed
upon so much that he, like the spoiled
horse, sometimes strikes his best
friends. Because a man does not
agree with us is no proof that he is
plotting against our interests, a
scheming grafter. Often we discover
our mistake too late, as did those
very persons who shamefully abused
J. H. Worst and defeated his candi-
dacy for the U. S. Senate, when at
that very time he was their best
friend. Not only did they condemn
him but every one who had a kind
word to say in his favor was made to
pay the penalty for seeming hostility
to the farmers' cause. Not all the
honors that they may tardily bestow
upon him will atone for those most
unkind acts.

SPECIAL OFFER

You Can't Afford To Miss This.

1. **Today's, North Dakota Farmer, Home Life and Woman's World, \$1.80.**
2. **Reliable Poultry Journal, North Dakota Farmer, Housewife, and Woman's World, \$1.95.**
3. **McCall's, Woman's World, North Dakota Farmer and Boys' Magazine, \$1.20.**
4. **Ladies' World, Today's, North Dakota Farmer, Woman's World, \$1.20**
5. **Modern Priscilla, North Dakota Farmer, Woman's World, Today's, \$1.20.**
6. **Woman's World, Metropolitan North Dakota Farmer, People's Home Journal, \$1.45.**

A pattern with Today's or McCall's.

NORTH DAKOTA FARMER
Lisbon, - North Dakota

Livestock Department

FARM AND STOCK NOTES N. J. Shepherd

Frozen cream will not make the best butter.

The best in any department of production is that which pays the largest profit.

To a considerable extent by increasing the yield per acre you lessen the cost of production.

To utilize all of the food product of the farm to the best advantage requires a variety of stock.

The purity and high breeding of an animal determines its power to transmit its good qualities to its offspring.

It is a good idea to grow such products as fluctuate least in value. A good draft horse is such a product.

A hog will thrive much better if he comes to fresh feed every time rather than to that he has mused over before.

It certainly seems reasonable that an immature mother cannot impart that vigor to her offspring that a mature one can.

Without stock there can be no complete utilization of the products of the farm, with stock there should be no waste products.

Sheep husbandry has a value to make land more productive and more profitable at a less expenditure than any other animal on the farm.

One direct value coming to the farmer from good roads is that it brings the farmer nearer to market in point of time.

In plowing the lightest draft is always secured when the plow is run with the least interference on the part of the plowman.

No cow should be condemned as a poor or unprofitable one until she has been fed up to her full capacity as a milk producer.

It is not best to always do things the easiest way. What you save in the beginning is usually lost in the final outcome.

The business of the farmer is to combine his capital and labor in such a manner that the two together may produce the best result.

Generally wheat bran makes white butter and corn, yellow butter but the color in no wise dependent on the buttermilk or any of its ingredients.

A pig is as easily and fatally stunted by overfeeding as by starvation, and is as likely to recover to a valuable animal from one condition as the other.

In nearly all cases it is cheaper to make growth than to make fat. Fat is the costliest part of an animal and of the least value as food.

To be successful in horticulture demands a good capacity for taking pains. The man not willing to give close attention to little details cannot grow fruits or vegetables with profit.

A sheep has a low nervous organization and once neglected gives up with little effort. But kept in thrift with good care it will be as hardy as any other animal.

The liquid voidings of animals contains about 50 per cent of the fertilizing value, containing over two-thirds of the nitrogen and four fifths of the potash.

To supply the loss of fats in skim-milk feed with it a small quantity of oil meal. Prepare the meal by boiling it to a jelly and then mix with the milk.

It is the skilled workman everywhere who receives the best pay because he can perform the most labor in a given time. The rule is as applicable to farm work as elsewhere.

A good cow is not necessarily a pure blood or a high grade, but she has the capacity to make cheap milk from good feed and that is all any cow can do.

Milk separates better and the risks from taint are less, while all volatile odors and taints pass out freely if run thru the separator right after being drawn.



Purebred Registered HOLSTEIN CATTLE

The world's champion advanced registry milk producer is the purebred registered Holstein-Friesian cow, Lutscke Vale Cornucopia, owned in the state of Washington. In 365 days this wonderful cow produced 31,239.4 lbs. of milk or over 15,000 quarts, exceeding the best previous milk producing record of 30,451 lbs. made by the Holstein Tilly Alcartra. The big "Black and White" cattle, not only by individual performances, but by matchless qualities and achievements as a breed, are proving their superior worth all over the world.

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Holstein-Friesian Association of America
F.L. Houghton, Sec'y Box 267, Brattleboro, Vt.

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Cogswell, N. D.

Will quote you special prices at any time on Angus Cattle, Feeding and Breeding Sheep, Shetland Ponies, Duroc Jersey Hogs, Wolf Hounds, Collies, Rat, Bird Dogs and other breeds, Angora Cats. All varieties of chickens, turkeys, geese, ducks, guineas, pheasants, rabbits, ferrets. Pets. Live Foxes, Skunks, Mink and Badgers.

Bixby's Red Polls

My herd bull, J. D. Merryweather, No. 24396, is the son of J. D. Millie, A. R. Grand Champion cow at Minnesota and Montana, in the 1915 show-ring and won the milk and butter contest with Guernseys, Jerseys and Brown Swiss competing with records of 600 pounds butterfat. J. D. Millie weighed 1280 pounds at thirty months old, and is full sister to the World's Champion two-year-old heifer. J. S. BIXBY, : : LISBON, N. DAK.

HOLSTEIN AND GUERNSEY HEIFER AND BULL CALVES. Choice selected promising dairy calves, practically pure Holstein and pure Guernsey, but not registered, nice color. \$20.00 each, all express paid to any point in North Dakota and adjoining states. Order true, you will be so well pleased you will want more.—Meadow Glen Yards, Whitewater, Wis.

JEAN DU LUTH FARM A. R. Guernseys and Red Polls!

Our Motto:
"Correct Type Together With High Production"
Our Herds number 270 pure breeds
Write for pedigrees of our \$200.00 bulls
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Geo. P. Grout, Managing Owner
Duluth : : : : Minnesota

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Small advertisements will be classified under appropriate headings at the low price of one cent a word for each insertion. Cash must accompany all orders. Each initial or number must count as one word. TRY IT HERE.

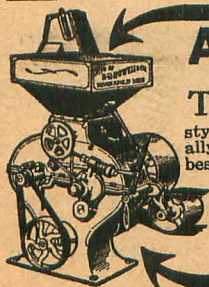
WANTED.—A buyer for my year-old Polled Durham Bull. First offer of \$50 takes him. Address: R. E. STRUTZ, Bismarck, N. D.

FOR QUICK SALE

Crowded for range, am compelled to sell 40 head of mares and geldings. Address Patrick McDonnell, Ennis, Mont.

ROCKY HILL SHROPSHIRE. Twenty-five head of registered ewes for sale reasonable. Also, a nice smooth bunch of ram lambs and a few aged rams Ernest Palfrey, Hope, N. D.

Wanted, to hear from owner of good Business for sale. Northwestern Business Agency, Minneapolis, Minn.



A ROLLER FEED MILL

WILL GRIND A WAGON LOAD OF FEED FOR 10 CENTS.

THIS is the Famous Howell Roller Mill you have heard so much talk about. The new improved mill for the scientific grinding of grain. Old style Burr and Stone Mills are out of date. Thousands of them are being annually replaced by the Famous Howell Roller Mills. Grind twice as fast as the best burr mill made. Does not heat the feed. Grinds Graham and Rye flour as well as feed. Has big capacity. Requires little power. No burrs or stones to wear out. Guaranteed to last a life time. Made in 13 sizes suitable for any size engine. Save one-half your time, gasoline and money by using a Howell Roller Mill. Write for Catalog F-13. We will send it free, together with the Famous Howell Roller Feed Mill Puzzle.

R. R. HOWELL & CO., Manufacturers. Minneapolis, Minn.

A pig needs to be kept on full feeding more nearly than any other class of stock raised for meat as not only is

a better profit realized but the quality of the meat is better than when the animal makes a slow growth.

science and an art, therefore a farmer must know and do.

The farmer must be a business man.

It takes a greater knowledge, requires more science, and intellect to farm now than it did 25 or even 10 years ago. What about our next ten or twenty-five years? We must therefore go to school to learn farming, and why not?

If you expect to take up a position with a business firm they expect you to be qualified to do the work, and in order to accomplish this you must have a business training, and a modern one. Then why should a young man be disgraced if he goes to a farm school?

Diversification will therefore be the only means by which we can bring our farms up to the standard, and in time a higher price for our land.

Why should Iowa, Wisconsin, Minnesota, Indiana, Ohio, and other states get from \$75 to \$300 or more per acre for their land? The answer is "Diversified farming."

The best monument ever erected to diversification I have seen is the silo. As it is the highest building on the farm, it can be seen for a long way, and it points out that diversification is being established.

And why should we not diversify? Will not prosperity come to us, the next generation, even if we farm differently?

You now have the three principal reasons why we should diversify:

1. The fast progress of invention.
2. The desire of the next generation to do more work in less time, and without the drudgery of our fathers (if one can call it drudgery) who were happy in doing their work.
3. The plain fact that if we raised cattle and hogs, we would have something to fall back on in case of a crop failure like 1916, and would be insured of steadier income with less debts.

Now let me give you a few reasons why we do not diversify.

1. We refuse to put back in our soil what we took out of it.
2. We cannot adopt rotation in our system of farming because of the large acreage we handle.
3. We have a tendency to buy more land, and do poorer work.
4. We will not make improvements, or share our land with our children, thereby causing a shortage of help in busy seasons.
5. There is not a clear understanding between father and son, causing son to be dissatisfied and leave home, to work out and have money.

"Overcome these obstacles and enjoy life."

DIVERSIFIED FARMING AND WHY

Thomas B. Linn, Son of a Pioneer Farmer and a Member of the Pioneer Farmers' Club of Steele County.

During the last twenty or thirty years, the state of North Dakota has been a grain raising state, a one-crop state rather, and only grain. Now the time is ripe for a change.

As long as the virgin soil held out, there has been no need for diversification.

The pioneer farmer of today is swiftly passing, and his ideas and thoughts which we consider old-fashioned are going with him.

His children, the ones who choose to take up his life work as their vocation, and follow in his steps are an entirely different set.

There would never have been this great change if it had not been for invention, and the desire of the young folks to have a good time and an easier life. The inventive genius has only one thought and that is to make money. In this he has picked the farmer as an easy mark, but at the same time he has helped to lessen the burden, and make life easier for him and his children.

We have not been slow to grasp the opportunity which has been offered us, but in this modern day when our vast wheat fields are giving out, we must necessarily turn to something which has proved successful in some states just east of us.

During this crisis which we cannot avoid we must turn to diversification. Horses, cattle, hogs and sheep, combined with concentrates and legumes spell diversified farming, and it is the modern way.

Diversified farming means a change from our old farming, and in order to change we must know what we intend to do, find out particulars, then go ahead.

For this special work we have the Agricultural College, the five sub-stations, and twenty-one demonstration farms, also the work of all the men interested in the welfare of our state.

Eighty per cent of the population of North Dakota are farmers. Agriculture will always be the foremost of all occupations and professions in North Dakota.

Agriculture is founded on chemistry and biology. Farming is becoming a

BREED THE BEST

There can be but **One Best**
Why lose profits breeding and feeding scrub hogs?

Two of our Famous **O. I. C. HOGS**
weighed **2806 lbs.**

Will ship you sample pair of these famous hogs on time and give agency to first applicant. We are originators, most extensive breeders and shippers of pure bred hogs in the world. All foreign shipments

U. S. Gov't Inspected

We have bred O. I. C. Hogs for 53 years and have never lost a hog with cholera or any other contagious disease.

Write today for Free Book, "The Hog from Birth to Sale" also True History of the Origin of the O. I. C.

THE L. B. SILVER CO.

Heights Temple Bldg.

Cleveland, Ohio

CLASSIFIED ADS CONTINUED 1 Cent A Word

WANTED to hear from owner of good farm for sale. Northwestern Business Agency, Mpls., Minn.

WANTED: To hear from owner of farm or unimproved land for sale. O. K. Hawley, Baldwin, Wisconsin.

WANTED: Man to wear fine suit, act as agent. Big pay, easy work. Banner Tailoring Co., Dept. 501, Chicago.

WANTED to hear from owner of good farm for sale. State cash price and description. D. F. Bush, Minneapolis, Minn.

WANTED. Live Foxes, Skunks, Mink and Badgers, any time. Enavilla Stock Farm, Cogswell, N. D.

FARMS OR BUSINESS, any kind, anywhere. We locate you free, deal directly with owner. Send for our free magazine. Western Sales Agency, Minneapolis, Minn.

POWER FARMING. The magazine of farming with mechanical power. Send 10 cents for three months' trial subscription. Power Farming, Box C, St. Joseph, Mich.

THE EARNEST HOMESEAKER is the man I want to hear from. I can save him many dollars on his purchase of a farm. All such please write promptly to Arnold, Land Agent, Rock Island Ry., 107 Wolvin Bldg., Duluth, Minn.

SALESMAN WANTED. Lubricating Oil, Grease, Specialties, Paint. Part or whole time. Commission basis. Get orders now for spring and summer delivery. Man with rig preferred. Riverside Refining Co., Cleveland, Ohio.

FOR SALE: The imported Guernsey Bull, LLwyfa Mon 30678, rich in the blood of the Masher and Governor of the Chene families; born Aug. 4, 1914; gentle and sure. Write D. H. Richards, Edgewater Farm, Ladysmith, Wis.

Fence Posts and Small Telephone Poles, Direct from Producer to Consumer. Pay after Inspection, Save Middlemen's Profit. Prompt Service, Personal Attention. Write for Delivered Prices in Carload Lots. Becker & Vogel, Clarks Fork, Idaho.

LEARN TO SPEAK IN PUBLIC. We train men and women to be good public speakers. Money, position and prominence to be gained thru good platform work. Total cost is only \$5.00. We teach other things—send for outline. Prin. W. C. Moore, New Egypt, N. J.

WANTED—MISCELLANEOUS HELP—From \$12 a week to \$3,000 a year shows possibilities of life insurance. You can be trained for this business. Will send you free our correspondence course of salesmanship and life insurance. This is not advertising matter but a course of instruction such as you would pay \$50 for. It is yours for asking, free. Write today. William King, Agency Supervisor, Dep't 29, Missouri State Life Insurance Company, St. Louis, Mo. Fastest growing life insurance company in America. Insurance in force over \$120,000,000.

LIVESTOCK MEETING AT BISMARCK

The program is now complete for the fifteenth annual meeting of the North Dakota Live Stock Association which will be held at the Municipal Auditorium at Bismarck, January 24th to 25th. Inasmuch as this is the first time the Live Stock Association has held a meeting in the western part of the state the program committee has put forth a special effort to provide a very strong program. It should be a real treat to the farmers and stock growers of the state to attend this meeting and hear such experts as are listed on the program discuss subjects of vital importance to the operation of every North Dakota farm. Everyone in any way interested in the betterment and increased production of live stock in North Dakota is invited to attend the meeting. The following is the program in detail:

Wednesday, January 24, 1917

9:00 A. M. "Forage Crops as a Factor in Economical Pork Production," Harry G. Krum, Secretary, American Yorkshire Club.

10:30 A. M. "Some Problems in Profitable Beef Production," F. W. Harding, Secretary, American Short-horn Association.

1:30 P. M. "President's Address," Alec MacDonald, President, North Dakota Live Stock Association.

2:00 P. M. "Raising Colts that Pay," Dr. Carl W. Gay, Chief Division of Animal Industry, University of Minnesota.

3:00 P. M. "Summary of the Work of the North Dakota Stallion Enrollment Board," J. L. Tompkin, Secretary.

3:30 P. M. Annual Business Meeting of the North Dakota Live Stock Association.

7:30 P. M. "Modern Methods in Beef Cattle Ranching," W. L. Richards Rancher.

8:15 P. M. "Mixed Farming," John N. Hagen, Comm'r. of Agri. for North Dakota.

9:00 P. M. "Paying the Mortgage with Live Stock," A. E. Chamberlain, Serv. Commr., Dakota Farmer.

9:45 P. M. "Live Stock Shipping Associations and the Marketing of Meat Animals," D. A. Gaumnitz, Member Campbell Commission Co.

Thursday, January 25, 1917

9:00 A. M. "Mutton and Wool Production and Marketing in North Dakota," W. H. Peters, Animal Husbandman, North Dakota Experiment Station.

10:00 A. M. "Modern Methods of Dairy Production," H. H. Kildee, Chief, Department of Dairying, Uni-

versity of Minnesota.

11:00 A. M. "Twenty Years of Progress with North Dakota's Leading Dairy Cattle Breeding Circuit," J. H. Shepperd, Vice Director, North Dakota Experiment Station.

1:30 P. M. Visit to the Session of the State Legislature.

6:30 P. M. Banquet to Members of the Association and Friends.

One of the main advantages of draft blood is an inherited disposition to work at a moderate pace and to submit to restraint from the collar and bit without fractious fuming and fighting at the driver.

The true theory of training is the careful and progressive development of the colt's powers by exercising them until he has reached the perfection of physical vigor, and has at the same time acquired the mental balance necessary to putting forth his greatest powers, as well as the courage and resolution to keep him up to his best in a continued effort.

Under most circumstances it is better to wean colts a little young than to put it off so late in the fall that there is no grass or green food to give them. Colts that are not used to eating hay or dry feed of any kind will not take to them readily and will not

thrive as well upon this kind of a ration as upon grass. So far as can be done colts should be fairly well accustomed to eating dry grain before being weaned.

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TO LANDOWNERS
Handy Pocket Size of Ropp's New Calculator—saves figuring, prevents mistakes. Answers almost any farm problem. Sent free with catalog of

Square Deal Fence

to any farmer who has not already received a copy. Catalog shows why SQUARE DEAL FENCE outlasts all others; why it stays tight and trim the year 'round. Write for these free books today.

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This Free Book
Answers Almost Any Question That Arises on the Farm

BOTS AND WORMS IN HORSES

are dangerous and should be exterminated without delay, according to Government bulletin. Nothing will do the work more thoroly and safely than our famous Improved Heureka Worm Capsules. They are absolutely reliable and fully guaranteed and highly recommended by professional men. Price \$2.00 for 12 capsules; or with Bailling Gun, one dozen \$3.50, two dozen, \$5.00, four dozen \$8.00. Order today from The Breeders' Remedy Co., 47 Biddle St., Dept. 24, Milwaukee, Wis.

North Dakota Farmer

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For Prices See **Special Offer** On Page 12



Poultry Department



Advantages in Using Trap Nests

If the trap nest was used for no other purpose, it would be worth the attention it requires to thus separate the idlers from the industrious. The most beautiful and best marked light Brahma hen on our farm laid only eleven eggs during the year when a yearling. What she laid as a pullet we do not know, as we did not use trap nests all that time. It certainly would not be profitable to keep such a hen, and yet she was good enough to put in a show room. The first year we used trap nests we discovered that about one-fourth of our flock were not worth breeding from. The next year we secured twenty per cent more eggs with twenty-five per cent less hens—we bred only from the cream. In other words, we got more eggs for less expenditure for feed or labor.

When the demand grew for brown eggs of the White Wyandotte breed, we discovered that about one-fourth laid white eggs and one-half gave us tinted eggs. One hen in particular laid a rich brown egg.

We set all the brown eggs and then started to pick out the brown egg layers. The trap nest caught them for us. To our surprise all these brown egg layers were among our poorest layers, while the best layers gave us a pure white egg. Here we were confronted with a problem: "Which would be the wisest—breed from the hens merely for color of shell, and ignoring their egg record, or breed for quantity of eggs regardless of color of shell?" We determined to work for the brown color first, as the call was greater for them, and then annually pick out the best layers in the lot and work for higher records.

The trap nests have also taught us which hens lay the best-shaped eggs, which the largest-sized eggs and which the best fertilized eggs. It is a remarkable fact that there are hens in a flock that never give us good fertility and again there are others that are very strong in that particular.

Another great service that the trap nest performs is to arrest the egg eater. If you have reason to suspect that a certain hen (which is found quite frequently upon the nest and apparently never lays) is guilty of eating her eggs, give her an egg while she is on the nest. If it is not there when you look again, you have pretty good evidence that you have caught

the right party. Decapitation should be the sentence.

You can not always tell your good layers from the number of times you find them on the nest. It is remarkable how often a hen will go on the nest and not lay. The trap nest will point out all such. The trap nest, too, will tell you which are your best winter layers, which pullets begin the laying early in the season, the number of eggs they lay in succession, the number of times they become broody during the year, and many more facts which can be obtained in no other way.

Objection has been made to the trap nest on account of the time required to attend the same. We find very little time need be spent with hens if a regular system is adopted. Every hour the attendant makes the rounds. He stops at only the closed nests. He opens the little door, and if the hen is sitting on the nest the door is closed until the next round. If the hen has laid the egg she will be standing up, waiting to be taken out. Five minutes each hour will be all the time necessary to attend to fifty nests.

BROILERS FOR THE SPRING MARKET

Michael K. Boyer

Broiler raising is a branch of the poultry business that calls for probably more patience and vigilance than any other.

From the time the eggs are placed in the incubator, to the day the chicks are grown and marketed, there is one constant care. Unless this close attention can be given, there will be

considerable loss if not failure.

The months of January and February are probably the best for hatching these chicks, as the stock can then be grown to marketable size in time to reach the top prices.

In selecting incubators, buy one of the standard makes, such as are used on the large poultry farms. This information can be readily obtained by writing to the manufacturer of incubators as advertised, and securing one of their latest catalogues.

For brooders, it is, generally pre-

Both Machines \$ **10**
Freight Paid

WINNERS IN BIG HATCHING CONTESTS EVERY YEAR

Think of it! These two UN-
BEATABLE Wisconsin Machines—
both for only \$10—
freight paid east of Rockies. Guaranteed 10 years and sold on 30 days trial—

130 Eggs
130 Chicks

30 Days Free Trial

MONEY BACK IF NOT SATISFIED

Wisconsin are made of genuine California Redwood. Incubators have double walls, air space between, double glass doors, copper tanks, self-regulating. Shipped complete with thermometers, egg tester, lamps, etc., ready to run. Biggest incubator bargain of the year. Send for our new 1917 catalog fully describing this outfit. A postal brings it by return mail.

180-Egg Incubator and Brooder both \$12.75
WISCONSIN INCUBATOR COMPANY
Box 42, Racine, Wis.

Stop Hatching Weak Chicks

WITH CHEAP INCUBATORS

Remember, it is not how many you hatch that counts, but how many you raise. A Queen costs but little more, and the extra chicks that live and grow soon pay the difference.

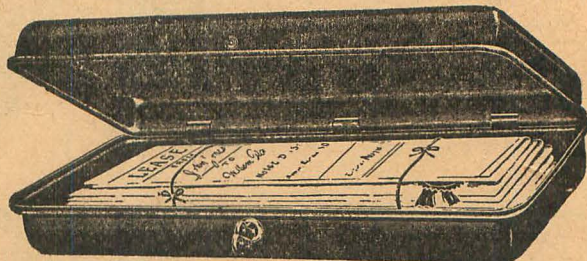
Queen Chicks Live and Grow

Most of the chicks you lose in the first two weeks die because they did not have proper vitality or strength to start with. Queen Incubators are famous for big hatches of strong healthy chicks that live and grow. The American Poultry Journal wrote us: "During the many years you have been advertising Queen Incubators in our paper we have not, to the best of our recollection, received a single complaint from one of your customers." Catalog free

Prices \$8 Up

Queen Incubator Co.
119 S. 14th St. Lincoln, Neb.

This BOX and NORTH DAKOTA FARMER for \$1



STEEL DOCUMENT BOX

Size 5x11x2. Price, with two keys, 75 cents, post paid. Send \$1.00. We'll enter or renew your subscription to North Dakota Farmer for one year and send box post paid NORTH DAKOTA FARMER, : : LISBON, N. D.

ferred to get either sectional indoor brooders for a regularly made brooding house, or outdoor brooders kept in an enclosed shed or building. The latter plan is very satisfactory.

The best eggs for broilers are those from a breed that is plump, fine grain meat, and birds that readily respond to good feeding. For this purpose our American breeds are best, and the leader of that class is the Wyandotte.

During January and February, one hundred good, yearling hens should easily fill a machine capacity of from 100 to 200 eggs each week, and by having four of these small machines going—one started each week—there would be a new lot of chicks born every seven days, after marketing begins there would be a weekly shipment.

The business had better be started in a small way, so that whatever losses might occur they would not be too serious.

In growing broilers the most important part is feeding and comfort. Before saying anything about the feeding, a few words relative to comfort may be of value. A broiler to be comfortable must be warm, must have good health, and must enjoy clean quarters. A cold bird will lose flesh; a warm bird will exercise and gain flesh. But that warmth does not mean a high temperature in the brooder. It means just about summer heat; just enough to encourage the little ones to scratch among light litter or sand for their grain. This exercise, coupled with good feeding and clean quarters, will insure health. The premises cannot be kept too clean—the work should be done daily.

The first object in feeding should be the growth of bone and muscle. There should be a strong frame to hold the fat. Stunted chicks make poor broilers. Up until a week or ten days old they should be fed every two hours, a little at a time. Then gradually as they grow older the number of feeds can be reduced gradually until they amount to a morning, noon and night feeding.

The first three days, the chicks will thrive on bread soaked in milk or warm water, and then squeezed dry; or oatmeal; or one of the prepared chick feeds now on the market.

After that the feed can be gradually changed, until heavier food is the order. After about two weeks of age the chicks will stand a mash made of equal parts of bran, middlings, sifted ground oats, and fine cornmeal. After the third week, meat scraps can be added to the mash, a little at first, and gradually increasing as the market age is near at hand.

All mashes should be fed crumbly—

not too moist, and never sloppy.

The prepared chick feeds on the market, which are composed of a variety of seeds and finely cracked grains, are useful for scattering among litter so that the chicks will be induced to exercise. In case any of these prepared or commercial feeds are not easily secured, millet or canary seed will answer the purpose.

Drinking water should be placed before the chicks from the first.

A box of fine grit is also useful, and which will prevent sour crops. A small trough of dry bran constantly within reach so the youngsters can help themselves at will, has a tendency of preventing bowel troubles.

If the chicks are properly hatched, fed and cared for, a pound in weight should be attained in from six to eight weeks of age, another half pound in from eight to ten weeks; and still another half in from ten to twelve weeks. However, even if sixteen are required to grow the broiler, it will be within the age for profit.

In order to have a uniform lot of chicks in weight, only one breed should be employed. Common eggs as a rule produce poor broilers and there is no uniformity of weight, size, and condition. This means a loss by extra feeding.

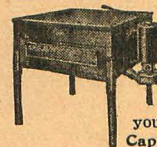
Broilers to be shipped a distance must be dry picked. For nearby home markets, where no objection is raised, they can be scalded, but care must be taken that they are not scalded too much, or the skin will easily tear in picking them.

After picked clean they must be thrown into cold water in which a handful of salt has been dissolved. Never pack carcasses for market that have not been freed from animal heat, or they will quickly spoil.

If the scalding method is used, heat the water to about the boiling point, and then, taking the head of the chick in one hand, and the feet in the other, dip the body several times in the water. Should the head touch the water it will give the eyes a shrunken appearance.

Annual Meeting

The annual meeting of the Ransom County (North Dakota) Poultry Association was held at Lisbon, Dec. 30, at which time the business of the past year was closed up, and new officers elected. The affairs of the association were found to be upon a good sound financial footing. The next Annual Show will be held at Lisbon November 19 to 24 inclusive, previous to which time the Annual Bulletin and Premium List will be issued. The following new officers were elected. J. P. Grange, President; W. S. Adams, Vice President; W. L. Divet, Secretary-Treasurer.



Capital Incubators

Save You Money
We don't advertise big, but we build Incubators, Brooders, etc., that are used by leading poultrymen, by State Experiment Stations, and sell at lower prices. It will pay you to get our free catalogue.
Capital Incubator Co., Dept. T St. Paul, Minn.



62 BREEDS, Pure-bred Chickens, Ducks, Geese, Turkeys. Hardy northern raised, vigorous, beautiful, Fowls, eggs, incubators, at low prices. America's Pioneer Poultry Farm; 23 years exp. Large fine Annual Poultry Book and Catalog Free.
F. A. NEUBERT, Box 000, Mankato, Minn.

FOR SALE—Excellent thorobred Barred Rock cockerels. Strong, hardy stock from heavy, egg-laying strain. Eggs in season. Book orders early.
Laurel Hill Farm, Westby, Mont.

FOR SALE. Silver-Laced Wyandottes. Cockerels, \$1.50 a piece. Mrs. Thos. Brady, Lansford, N. Dak.

FOR SALE. Well Bred Up R. C. Reds. First prize winners; cockerels, \$1.25, pullets, 50c. Mrs. John Henderson, Bx228, Beulah, N. D.

White and Columbia Wyandottes, Light Brahmas, and S. C. White Leghorns. Over 30 years a breeder. Stock and eggs for sale. MICHAEL K. BOYER, Box 27, Hamonton, New Jersey.

Quality White Rocks

Hatching Eggs and Stock in season. We have the Best. O. A. Barton, Valley City, N. D.

BARRED P. ROCKS

Big, Strong, Prize-Winning Stock
Hawkins, Bradley Strain

Eggs and stock in season at very reasonable prices.

PERCY BEALS

BOX 736 : : FARGO, N. DAK.

EXERCISE OR REVIEW PAPER FOR NORTH DAKOTA SCHOOLS

We bought this stock before the advance in price. Going now at ante-war prices.

ONLY \$2.00 PER 1,000 SHEETS 8½X11 IN.

Sent anywhere in the state for above price, all charges prepaid.

Sample fourth ream sent for 35 cents post paid.

Westland Educator,

Lisbon, North Dakota

School and Home



Miss Ura Leader
Ruraldale, N. D.
Dear Miss Leader:
The love of good stock is universal. It is as characteristic of the young people as it is of the old people. This sentiment is not confined to any one

race. And this sentiment is especially strong in respect to horses.

The study of horses affords you an excellent opportunity for sympathetic study with the pupils. When some one drives up to the school and all the "kids" whisper, "Teacher has a new beau," I believe you are wondering about the appearance of the "fiery steed." Is it not true that the horse is of greater importance than the driver! It is worse to be seen in company with a plug horse than a plug man.

The driver is judged by his horse. The beauty of a good horse is the admiration of the sculptor. Horse sense is the universal standard. When a person is said to have horse sense, he is considered to be far above the average. The speed of the horse is marvelous, his strength is prodigious. You can not talk about horses without using superlative terms. No wonder everyone loves good horses.

In many cases this loving sentiment with respect to horses lies dormant, judging by the way they are frequently used and cared for. Humane feelings are often sleeping. But give a boy or girl a pony and then observe his treatment of animals! The pony will no doubt receive more careful consideration than brother or sister.

Every boy and girl is interested in good stock. He should know how to properly care for it. Good livestock is a continual source of pleasure and profit. Most young people have an ambition to become good judges of stock. Such a knowledge will make their work more pleasant and more profitable.

There are many different breeds of horses. Each breed has some peculiar usefulness. Associations have been formed for the registry of pure bred animals of all breeds. You can get much valuable information by writing to these associations.

The different breeds may be classified according to their particular adaptations. There are five classes of

horses.

Draft horses: percheron, French draft, clydesdale, shire, Belgian, and suffolk.

Light harness: American trotter, Morgan.

Heavy Harness: hackney, French coach, Cleveland bay, and German coach.

Saddle: Arabian, thorobred, American saddler.

Pony: Welch and Shetland.

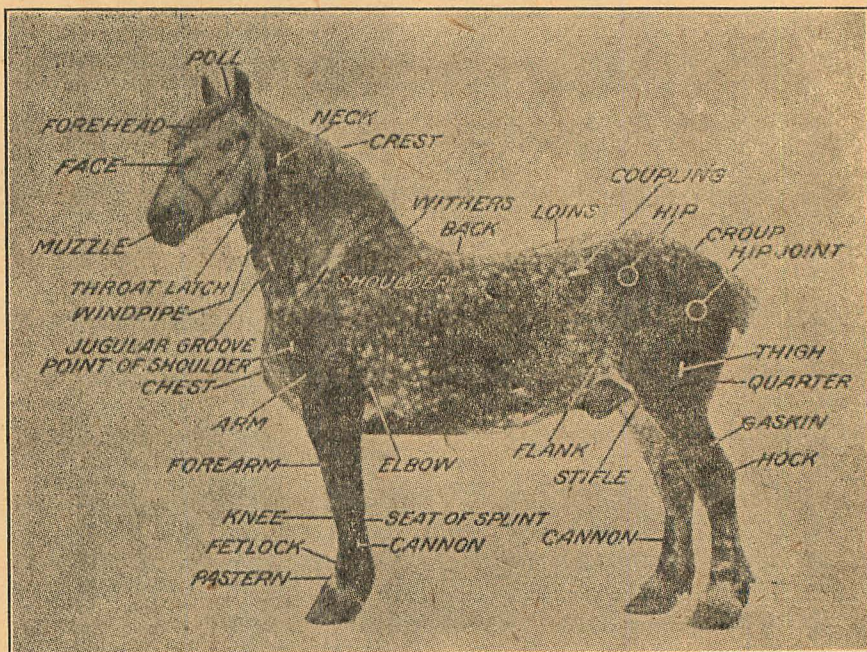
Each of these classes may be further divided according to the particular usefulness of the individuals. Thus draft horses are not all equally,

formation is of greatest importance. Most common ailments are due to poor conformation.

Do you want a score card? We will be glad to send you one. Do you want some particular information, we may be able to supply this. The Department of Agriculture has published many valuable bulletins which you should have in your library. If you really want these helps, hurry up, time is passing and we won't live forever.

I believe that Seed Germination is the other important topic which you are to present this month. This work fits in nicely with school duties. The results need not be confined entirely to testing seed. Nature study, botany and other phases of agriculture may be considered with the same material.

Good seed is of great importance in



An Intimate Study of the Horse.

strong, active, or of the same size. Some types are more useful for one purpose than for another. Market classes of draft horses may be briefly indicated as: expressers, chunks, heavy draft, artillery, scrubs and plugs.

So far as your students are concerned the draft horses are by far the most important. The characters of a good draft animal are things about which you should be informed. Con-

crop production. Seed should have a high germination percentage. It should be pure and free from noxious weeds seed. It should be true to va-

CANCER



and Tumors successfully treated (removed) without knife or pain. All work guaranteed. Come, or write for free Sanatorium book Dr. WILLIAMS SANATORIUM 3023 University Av., Minneapolis, Minn.

ENCOURAGE AND MAKE USE OF THE SPIRIT OF PLAY

Playground Games, 10 cts. Rules for playing the more common games of the school ground. Game of Times, 15 cents. A help in teaching and learning the tables and simple factoring. Davies Number Cards, 25 cents. All possible combinations. For all grades. In boxes. Westland Phonic Cards, 25 cents. Busy work for primary grades. An aid to sight reading. Fundamental Operations of Arithmetic, 15 cents. Invaluable for rapid work in numbers. Uncle Will's Magazine, The Rotary, 50 cents. Unique. Has personal element. 20th year. North Dakota Speller, 40th M. For 5th-6th, and 7th-8th Grades, 15 cts each. Trial, both 25 cts. Westland Educator, Box F. - - - Lisbon, North Dakota

riety. All of these points should be taken up along with seed germination.

Encourage the children to bring in samples for testing. Be sure they use the samples which will be used for seed purposes. It will give a personal interest. It may also interest the grown people.

Take particular precautions to see that the samples tested are representative of the bulk seed. This is not as easy as it may seem. I wonder if you have some satisfactory scheme for this work.

After the sample is taken can you determine the kinds and number of weed seeds present. You will be sure to find several kinds. Determine how many and what kinds of weeds are being planted in the seed grain. Is the seed adulterated, if so to what extent.

Sweet clover used to be mixed in alfalfa seed. Cheaper seed may be substituted for some of the high-priced seeds. Pieces of finely ground rock have been found in commercial seeds. Diseased seed may be offered for sale.

Crop production is of great importance and success depends largely upon the seed used. Give the children this information. It may mean much to them in later life.

Sincerely Yours,

O. O. CHURCHILL.

INFLUENCE OF FAR COUNTRIES IN OUR MODERN DRESS

Accessories Seen in the Stores

Cosmopolitan New York grows more cosmopolitan daily. Even as her doors are open to those from the most distant parts of the world, so are the minds of her fashion designers open to receive ideas from the four corners of the earth. Whatever may be turned to good account is quickly utilized and brought before the public for the world of fashionable women to pass on.

The very latest influence in dress has come from the Far East. Japanese and Chinese embroideries and like effects have come in for recognition and have taken quite an important position in the world of fashion.

Many of the windows of the best shops are now displaying the real Japanese and Chinese garments with their rich silks and gorgeous colorings. Most of us, however, are content to admire these beautiful costumes in the windows. No one has yet appeared on Fifth Avenue arrayed in the true costume from the land of the cherry-blossom. But many have been seen

in costumes showing the Oriental influence.

Another country from which has come inspiration for some of the present styles is Spain. The red and black combination worn by the dark-eyed senoritas of that country is frequently used with charming effect, especially in semi-evening gowns. From Spain also have come the beautiful fine lace scarfs or mantillas which are now fashionable, and the large combs for the hair which are used with the coiffure that is distinctly Spanish.

It is well known that from Russia, also, we have received a great many contributions to the styles, not only in the line of blouses and dresses, but in the Russian turbans raised high in front. Some of the turbans are worn with chin-straps, or "brides," to which a veil is often attached.

The Russian blouse dress, with a long blouse reaching to the knee and falling over a pleated skirt, is one of the best-liked styles of the season. Sometimes it is made with a high close-fitting collar, and again, the open neck with the becoming sailor collar is used with it. With the high collar and closing at the side, these dresses give very much the impression of a suit. It has been observed of late that such dresses giving the appearance of suits have been very much worn at afternoon functions. A waist with a short peplum sometimes gives this effect, especially when the dress is developed in velvet, velours, or the other wool materials which are used both for suits and dresses.

Accessories of Dress

All the dainty feminine accessories in every form are displayed to the greatest advantage in the stores. Bags of all descriptions there are, for these are considered a very necessary addition to the wardrobe in these days. Bags of velvet, suede, ribbon and beads are seen in such a variety of colors and shapes that no one can possibly have any difficulty in selecting those that will harmonize.

The Institute Essay Contest

The essay contest was most successful, fully one-third the members submitting essays. All showed that their eyes and ears had been used to good advantage. So excellent were some of the essays that it was difficult to determine the winners.

The first prize, a five-dollar gold piece, offered by W. G. Crocker, was won by Ethel McGuigan, of Chaffee.

The second prize of \$3, offered by Marvin S. Kirk, of Devils Lake, was

won by Elizabeth McHolland, of Cavalier.

The third prize of \$2, offered also by Marvin S. Kirk, of Devils Lake, was won by Leonard Stephen, of Sanborn.

Mr. Kirk was the first president of the Boys' and Girls' Institute, and consequently is deeply interested in this very important state institution.

Altho there was no mention of prizes to those deserving of special mention, the North Dakota Farmer gives two-years' subscriptions to the following: Leo Johnson, Devils Lake; Lillie Gjein, Grafton; Anna Vinje, Gardner; Mary Alin, Fullerton; Emma E. Strutz, Thompson; Geo. F. Loudon, Tokio; Selma Tverberg, Grafton.

To each of the other contestants submitting essays the North Dakota Farmer gives a year's subscription.

THE TRIP I SEWED MYSELF INTO (First Prize)

Ethel McGuigan, Chaffee, N. D.

Monday evening, December the eleventh, I reported at the Annex, according to instructions I received from Mr. J. W. Riley, Superintendent of Schools in Cass County. I found a cozy room for three awaiting me. About ten o'clock a girl and deputy superintendent from one of the twenty-one counties represented came to share the room with me and were my pleasant companions for the next four days.

Tuesday morning we all went to the Little Country Theater at nine o'clock and the program for the week opened with singing led by Miss Gust.

Mr. Cooper of the Agricultural College gave an address of welcome and Frances Kelsh, president of the institute, responded. Miss Sullivan introduced Mr. Galehouse, Miss Newton, Mr. Palmer, Miss MacDonald and Mr. W. G. Crocker, better known as Uncle Will, whom we had all heard of but few had seen. Uncle Will taught us a yell which proved to be very useful later in the day.

Miss Sullivan talked to the girls about the Sewing and Canning Clubs. She showed us how very important vegetables were as a food and how very cheaply they could be canned, the average cost being about three cents a quart. She read the story of one girl's experience in her canning work last summer.

After Miss Sullivan's talk Mrs. Rinlaub talked to us on "How Shall We Dress?" She showed us what colors could be used together and how we should choose our colors. Her talk was of much interest to me.

We had luncheon at Ceres Hall and in the afternoon attended the opera.

I enjoyed opera more than anything else. The operas given were "Cavalleria Rusticana" and "I Pagliacci." It surely was a treat especially to those of us who had never attended an opera before.

We had dinner at Ceres Hall and in the evening went to the Armory, where we were delightfully entertained by stories, singing, dances and so forth. I particularly enjoyed one of the dances entitled, "The Quarrel between Wheat and Black Rust." After the program we played games.

At about half-past nine we started for Fargo in two special street-cars that came to get us. We were part way there when the lights went out and it was then that our yell became useful. Someone said, "Let's give our yell." Just as we finished it the

lights flashed on. We could have gotten no better results from Aladdin's wonderful lamp.

Wednesday morning the girls went to Ceres Hall and Miss MacDonald gave a bread demonstration. She had bread in different stages so she could show us all the different processes. She showed us how to use the different kinds of yeast.

Next we went to the Stock Judging Pavilion and Mr. Shepperd talked to us on Beef and Dairy Cattle, telling us the characteristics of good beef and dairy cattle.

After his talk we went thru the mill and the processes of flour making were explained.

After going thru the mill we went back to Ceres Hall and Miss MacDonald made loaves of bread, biscuits

and so forth and baked them. She showed us what points to look for in judging bread. I was very much interested in all of the demonstration.

We then went to the Auditorium at about twelve o'clock and the Commercial Club served a delicious luncheon.

In the afternoon Mr. Hardy, Secretary of the Commercial Club, took us to places of interest in the city. We visited the Electric Light Plant. At the Fire Department the men gave a demonstration showing how quickly they could be ready in case of a fire. At the Manchester Biscuit Company building we saw the way the cookies and crackers are made. We visited the Ford Building. Later in the afternoon we went to the Garrick and saw Mary Pickford in "Less Than the Dust."

Thursday morning we went to the Armory and Mr. Peterson told us many interesting things about the care of poultry. He showed us a model chicken house.

We went to the Lecture Room in Ceres Hall and Miss Newton told us some of the things a club girl could do in her home. Miss Sullivan gave a canning demonstration using the cold pack method. She used tomatoes that had been grown in the greenhouse. They certainly looked lovely. Miss Jensen showed us three ways to use a can of corn.

We had lunch in Ceres Hall. After lunch we went to the gymnasium and played games. Later we inspected the buildings on the Agricultural College grounds.

We went to the top of the Chemistry Building and saw the instruments used in recording the weather and measuring the rainfall. We went to the greenhouse. It certainly looked good to see so many green plants. We visited the dairy barns at the milking time and saw the milking machines in use.

In the evening we went to one of the buildings and saw moving pictures. Some of them were taken in Fargo and some in Yellowstone National Park.

Friday morning we went to The Little Country Theater and Mr. Waldron talked to us on trees and shrubs. He told us what kinds to plant for shade and what kinds to plant for windbreak. Later we went to the Lecture Room in Ceres Hall and Miss Fromme talked to us on House Decoration and Miss Taylor talked to us on textiles. She showed us how to test cloth, to see what fiber it was made of and she told us why silk goods so often cracked when put away.

After Miss Taylor's talk we went to The Little Country Theater and had a business meeting. The prizes were



KNOW THE QUALITY OF THE SEEDS YOU SOW

THE sowing of poor seed means a year lost with little or nothing to show for the labor. While there are several things that help to make a crop—soil preparation, fertilization, cultivation, weather—by far the biggest part of the crop success depends on the quality of the seed you sow.

FARGO BRAND SEEDS

are trade-marked—a mark that promises good quality, full measure and prompt service. We are expert seedsmen. We specialize in Northern Grown Seeds. Our business has a steady growth, the result of satisfied customers, many of them constant buyers of Fargo Brand Seeds since we were first established 30 years ago.

Our stocks are excellent. Every requirement covering selection, cleaning, drying and grading has been most carefully performed and in addition to our efforts the North Dakota Pure Seed Law which has the indorsement of every reliable seed house, means added protection to you.

Here are some of our offerings in seed wheat, barley and oats:

MARQUIS WHEAT This beardless variety is a favorite in many localities. The yield is early and heavy averaging 40 to 50 bushels per acre, the kernels are dark, plump and flinty. Produces a flour of the highest grade.

ODEBRUCKER BARLEY Ahead of all other varieties. Has a fine color and the yield is heavy. The very best barley you can grow. Our supply has been secured direct from expert growers of this particular variety.

WHITE RUSSIAN OATS All Western farmers know this variety. It is the old reliable standard side oat. It is hardy and the yield is heavy. Has strong straw and is as near rust proof as any variety grown in the Northern States.

DURUM WHEAT Try the Arnautka variety, very successful in Western and Southern North Dakota. Plant growth very strong and rapid, getting ahead of the most noxious weeds. Withstands adverse weather conditions and does not easily shell.

BEARDLESS BARLEY Under ordinary conditions this barley is ready 60 days from date of sowing. If your old stock of grain for feeding is low you've no need to worry if you sow this variety. Extremely early and easily threshed.

REGENERATED SWEDISH SELECT OATS Some wonderful yields have been produced in the Northwest, often showing 100 bushels per acre. Our stock is strictly pure and the price low. Sow a good field of this leader among oats.

SEND FOR OUR 1917 CATALOGUE

Write to-day for samples and catalogue and if you will also send us the names of two or more farmer friends, who would be interested in Fargo Brand Seeds, we will send you one of our Farmers Record and Account Books—something every farmer needs.



FARGO SEED HOUSE
FARGO, NORTH DAKOTA
ESTABLISHED 30 YEARS



awarded for the best sewing and canning. The secretary's and treasurer's reports were given. A committee was appointed to nominate officers for the next year. A resolution committee was appointed. The officers were elected and the resolutions adopted. Marie Marcoll was elected president.

We were then free to go where we wished in the afternoon. The wireless station was open and we could visit it if we wished. I enjoyed every minute of the meeting and felt more than repaid for the many long hours I spent sewing myself into the trip.

SOME OF THE SIMPLEST PRINCIPLES OF AGRICULTURE

By Chore Boy

Horses

Horses are the most important branch of the live stock industry in North Dakota. The number of horses in the state is nearly a million and at an average value of \$100 this amounts to ten million dollars. About 20,000 colts are produced each year.

Many seem to think that the automobile, the tractor and the truck will lessen the opportunities in horse breeding. Instead it seems to have done the opposite as the prices for horses have increased. The market for heavy draft horses is unusually good.

The horse is one of man's most obedient animals and good servants. To secure the most labor from a horse it must receive good care and the proper feed. This will be especially true on the grain farm where so much of the work is dependent on horse power and at some seasons there is a rush of work while for several months there is practically no work for the horse. This means that the horse needs different care and feeding in the busy

season and in the stock season. It also means that when the horses are started to work in the spring, if they have done little or no work in the winter, they are soft and need to be hardened up.

When at hard work the horse needs one and one-fourth to one and one-half pounds grain per each 100 pounds in weight daily, i. e., a horse weighing 1400 pounds will need seventeen and one-half to twenty-one pounds of grain. The evening feed of grain should be the lightest and the evening feed of hay the heaviest. Mr. Peters of the North Dakota Experiment Station recommends giving the grain and hay as follows: morning feed—grain 8 pounds, hay 5 pounds; noon feed—grain 8 pounds, hay 5 pounds; evening feed—grain 5 pounds and hay 11 pounds. A horse should not be fed too much hay. The plan of feeding should be as follows: water first, then hay and finally the grain feed. The reason for this is that the horse has a small stomach and if it drinks a lot of water after eating the food will be forced out of the stomach before it is acted on by the juices in the stomach sufficiently. That is one reason for feeding less hay in the morning and at noon than at night. The grain will need to be fed almost the first thing, then there is usually not time for eating a good deal of hay. In the evening the hay can be fed first and the grain a little later. In this way the hay which is bulky will not push the grain feed out of the stomach before it has been sufficiently digested.

Oats are the best grain feed for the horse. Corn is also used very extensively. If possible mix a little oats with the corn. A bran mash once a week is good for the horse. In the season when the horse is at hard work it should be fed less on Sunday than

on days when not at work. Reduce the grain ration one-fourth to one-third on these days. Timothy hay is regarded as one of the best roughages for the horse. Alfalfa is fed with success by many. When it is fed the amount must be kept down and the grain feed can be reduced some too.

If the horse is in good condition when the season's work is done it can be fed on oat straw, prairie hay or corn fodder. It may be necessary to feed 4 or 5 pounds of grain per day to keep it in good condition, depending on the roughage fed. The idle horse should have exercise every day when the weather permits.

In the spring when beginning heavy work start the horse in gradually if possible, lift the collars occasionally to allow the heated shoulder to cool off. The collar should be kept clean, incrustations on its surface may cause trouble. The collar should fit the horse, being just long enough so that the hand can be put between collar and the breast. The horse should always have the same collar, it becomes fitted to the shoulder. Changing it to another horse spoils the fit.

The horse which is so obedient, yet so spirited and useful deserves good care. From a selfish standpoint good care pays, too, as it results in the horses' being able to do more work.

Seed Germination

The value of a seed is its ability to grow and produce a strong plant. The one certain way to find out how seeds will germinate is to put them under conditions proper for growth and see if they sprout. These conditions are warmth and moisture. Wheat and barley germinate best at a temperature of 60 to 75 degrees, F. They will grow at as low a temperature as 38 to 45 degrees. Oats and flax sprout best at 70 to 85 degrees but

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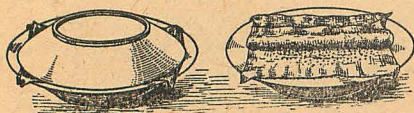
Directions

Take any number from one to fifteen, place in the square so when added together, vertically, horizontally and diagonally, the total will be

27

No Number can be used more than twice.

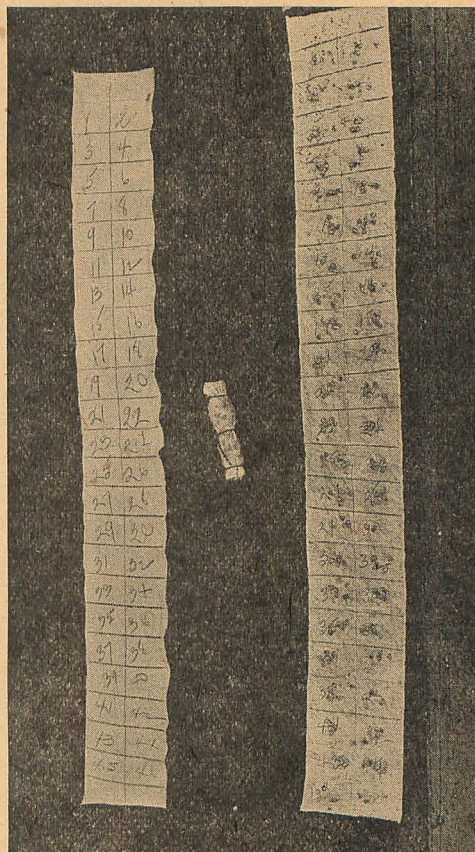
A good way to test seed where only a few samples are to be tried is to take a plate or pie-tin; lay a few



Another good way to test seed is to

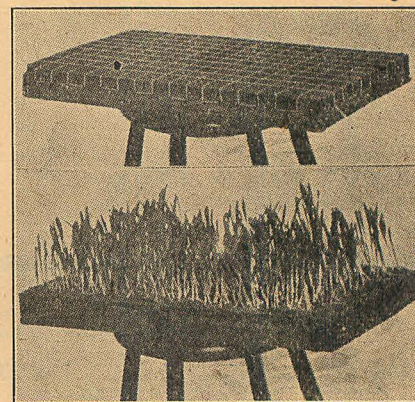
Place 5 or 6 kernels from each ear in one of the spaces on the muslin. When the spaces are full roll up the muslin strip with the corn on it. Tie a string around it, and moisten it well and set one end of the roll in a dish or pail with a little water in it. After 5 or 6 days unroll the muslin and examine the kernels. When a space is found in which only 4 out of 6 kernels grew that ear is not very good

The Rag Doll Test



The Rag Doll Test

the Seed Commissioner at the Agricultural College. He will not only test the seed for germination but he will also make a report on the



Another Seed-Testing Method

At any rate test the seed or have it tested.

One advantage of raising corn and alfalfa is the employment of the farmer's time during the months of May, June and July. The all-wheat farmer usually spends those months in contracting debts that the uncertain wheat crop often fails to liquidate.

Plan for ruling a Rag Roll

[illegible]

Size of the cloth
Each square is two

Tester for 100 ears.

51								
61								
71								
81								
91								

54 inches by 18 inches
inches.

It is easy to test seed and in this way one finds out whether the seed is the right kind to plant or not. In case one does not want to do the testing, he can send the seed to H. L. Bolley

Seasonable Suggestions

Mrs. Sadie Baird, Editor

SOME HELPFUL HINTS

Enameled ware, when discolored, may be cleaned with a paste made of salt and vinegar.

Berries will not mash up when cooking if the sugar is put on them the night before cooking.

If slices of mush are dipped in white of egg before frying, they will be crisp and will brown nicely.

Greasy coat collars can be cleaned thoroly by sponging with alcohol in which a little salt has been dissolved.

A cloth wet with vinegar put over cheese will keep it from molding.

Library Paste

Wet a cupful of flour with a pint of cold water, rubbing it smooth. Pour gradually three cupfuls of boiling water over this, working well until you have a smooth batter. Set over

the fire and stir for three minutes. After the boiling point is reached pour it out and when luke warm beat into it one teaspoonful of oil of cloves or cinnamon. Put in bottle and cork tightly.

For Polishing A Range

An expert housekeeper gives us her method of caring for the top of her range.

When my range is warm, but not hot, I rub a piece of paraffine over the top, covering the entire surface with this coat of wax. Then I take an old stocking and rub the top good and hard. By keeping my "paraffin rag" handy and giving my range a little rub off nearly every day, and a thoro cleaning every Saturday my range has a polished top which makes it easier to clean because it is not porous and grease cannot penetrate it.

To Sugar Fried Cakes

Put powdered sugar in a paper bag. Drop two or three cakes in at one time; hold the top tightly and shake. Do not sugar until just before serving.

Pour boiling water over a turkey or chicken which has stood for several days to ripen, to bring back its plumpness.

Rice, tapioca, macaroni and similar dry materials may be kept without any trouble in covered cans in a dry, clean place. The same method is advisable for raisins, Zante currants, evaporated and dried fruits and similar supplies.

Glass preserve jars are perhaps the best and most convenient of all containers for small quantities of almost any food material.

Cakes and cookies should be cooled after baking and kept in tin boxes or in earthenware jars which, like bread boxes, should be often scalded and aired. A cake, pudding or pie put out of a window uncovered to cool is something that no careful housewife would place on her table if she stopped to think how easily the food may be contaminated.

If lard is rendered at home in large

quantities, it should be kept covered in tins or earthen jars, in a cool, dry place, as in a cellar or storeroom.

The skin of poultry should not only be washed, but scrubbed with a soft brush and warm water in which a teaspoon of baking soda has been dissolved. Such treatment will prevent the disagreeable "henny" taste often noticeable in cooked poultry.

Dishes require an application of hot water with the help of soap or, better still, carbonate of soda, a thoro rinsing in hot water, and wiping with a sterilized cloth (that is, one which has been in boiling water since it was used before). By this latter method the dishes are practically sterile, while many organisms are left on the dishes that are washed by the ordinary method.

CHOCOLATE

Allow one heaping tablespoon of grated or pulverized chocolate (made into a paste with a little hot water) to each pint of fresh milk; let it come to a boil and sweeten to taste. Flavor with cinnamon or nutmeg, if desired.

HONEY

Pure Extracted honey—the most healthful and wholesome of all sweets. Our honey is put up in a neat clean manner, and is strictly first class in every way. Price: 2-60 lb. cans in case, \$12.60; 1-60 lb. can \$6.60; 6-10 lb. pails in case, \$7.20; 6-5 lb. pails in case \$3.75; single 10 lb. pails \$1.25; single 5 lb. pails \$.65.

EGGERS APIARIES CO.,
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WE GUARANTEE EVERY POUND OF Clover Honey

We send out to be pure honey and of the finest quality. Price, \$3.45 per 30-lb. can, or for 2 or more cans \$3.30 each. Sixty-lb. cans \$6.30 each. Sample 10 cts. Price List, Free.

M. V. FACEY, : : PRESTON, MINN.

The Cheapest And The Best

Fresh Frozen Lake Superior herring direct from the nets at \$3.00 per 100 lbs. Dressed Herring with heads off and inwards taken out \$4.25 per 100 lbs. Every shipment inspected by the State Pure Food and Dairy Commissioner.

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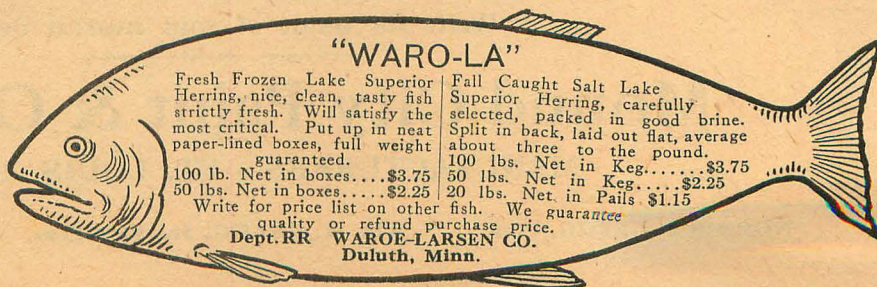


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ESTABLISHED 1780 DORCHESTER, MASS



Fresh Frozen Lake Superior Herring, nice, clean, tasty fish strictly fresh. Will satisfy the most critical. Put up in neat paper-lined boxes, full weight guaranteed.
100 lb. Net in boxes....\$3.75
50 lbs. Net in boxes....\$2.25
Write for price list on other fish. We guarantee quality or refund purchase price.
Dept. RR WARO-LARSEN CO.
Duluth, Minn.

Fall Caught Salt Lake Superior Herring, carefully selected, packed in good brine. Split in back, laid out flat, average about three to the pound.
100 lbs. Net in Keg.....\$3.75
50 lbs. Net in Keg.....\$2.25
20 lbs. Net in Pails \$1.15



Which Will You Have

Here are two cans of Paint.

Both are exactly the same size.

One will cost you \$2.75 per gallon. The other will cost perhaps as little as \$1.75 per gallon, but the Mound City Horse Shoe Brand at \$2.75 per gallon will cost you less in the end.

Reason? Simple enough.

Because a gallon of "Horse Shoe Paint" will cover a larger surface than the cheaper grade, and fewer gallons are required for the job. By actual test you will find that six gallons of "Horse Shoe Paint" (enough for two coats on a house measuring 2100 square feet) will go as far as ten gallons of the \$1.75 kind.

In other words, you invest \$16.50 in "Horse Shoe Paint," against \$17.50 in the cheaper grade.

Not only this, but the Horse Shoe Brand is bound to outwear the other two to one, making the Horse Shoe Brand far more economical in the end.

You save on the total cost of material.
You save in labor, because of the long life of the Horse Shoe Brand.

You save once more in the satisfaction of knowing that your property is beautified and protected with the highest quality of painting material that modern skill and science has yet developed.

AGAIN!! Mr. Property Owner:—

Which will you have?

Mound City "Horse Shoe Brand" Paint

Sold only by

Paint, Hardware, Lumber and Drug stores

Write for name of your nearest dealer

Mound City Paint & Color Co.

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